Vol. XLVII Number 23

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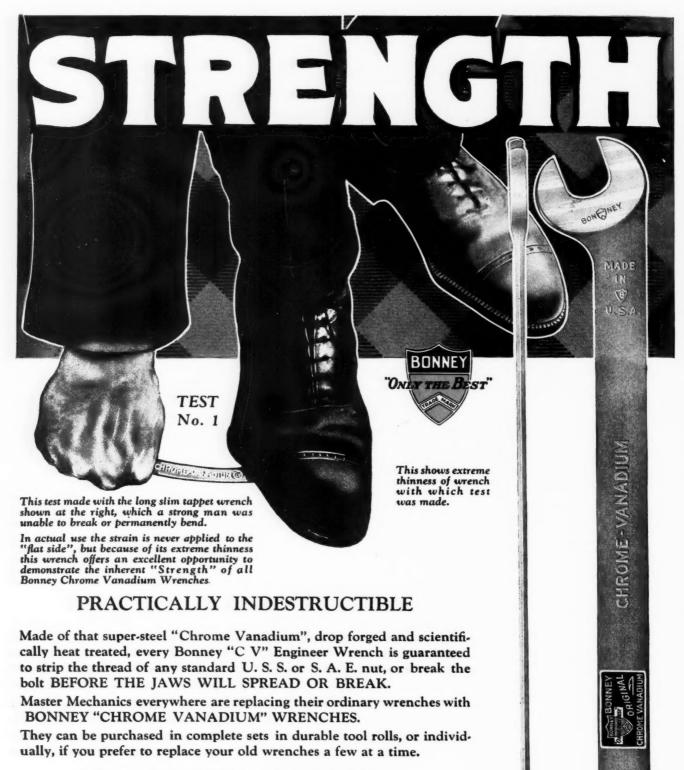
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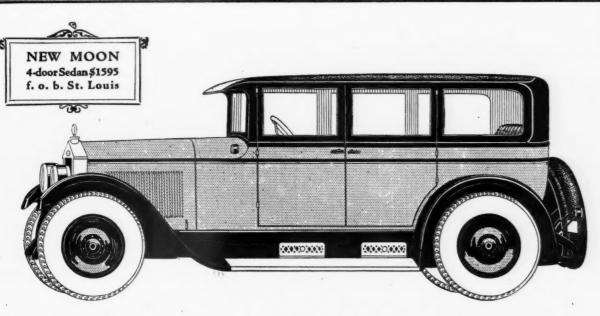
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ACTUAL SIZE

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A Real 4-Door Sedan at \$1595!

The production of this new Moon 4-door Sedan is the greatest step forward the Moon Company has ever made. Every dealer who has seen this car admits that it is the greatest value they have known for years.

Here for the first time is a genuine honest-to-goodness Sedan built exactly like cars that sell for twice the money. It has the same exclusive body lines, style finish, roominess.

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With this car as a leader you can get real volume and with the Moon contract you make a handsome profit on this volume.

Write us for further particulars about this car and the financing and merchandising plan behind it.

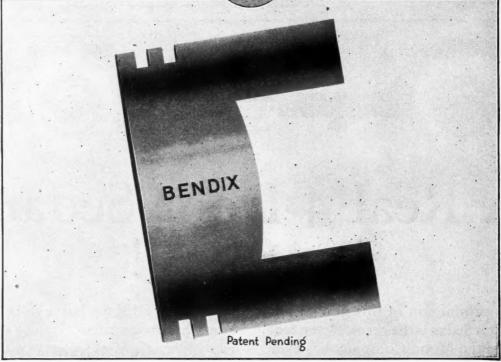
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MOON MOTOR CAR CO. , ST. LOUIS , U. S. A.

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No Special Tools Needed

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Vol. XLVII

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Subscriptions accepted only from the Automotive Trade Entered as Second Class Matter Sept. 19, 1899, at the Post Office at Chicago, Ill., under Act of March 6, 1879.



Illustrations show the 'Yankee" Vise holding work that is being center-punched at the bench; and how the body of Vise, with work in it, is removed from base, and carried to drill press, and then from machine to machine.



"YANKEE" VISES
With Swivel Base
No. 1994—Body 10½ in.
long, 4 in. wide. Jaws
open 4 in.; depth 2½ in. No. 1993—Body 7¼ in. long, 2% in. wide. Jaws open 3% in.; depth 1% in. No. 1992 — Body 4% in. long, 2 in. wide. Jaws open 1% in.; depth 1% in. No. 1991—Body 35% in. long, 11/2 in. wide. Jaws open 11/2 in.; depth % in. Without Swivel Base As above: Nos. 994, 993, 992, 991.

Even if you have other vises you need a "YANKEE"

The "Yankee" is the only vise that can be detached from its base, holding the work, and taken from one machine to another.

Think of the time saved by this convenience!

Work is kept in alignment through all the operations as the sides, end, top and bottom, and sliding jaw of vise are machined true to hold work square, whether used flat or on sides.

FREE Tool Book

Pictures and de-scribes all the "Yankee" Tools. Every repair shop and garage should have a copy.

Vise is detached from swivel base by loosening set screw. Cam-throw lever locks vise on base in any position.

Removable, hardened steel block, with V-shaped grooves of various sizes, holds round or irregular work.

Some other "Yankee" Tools

Spiral Screw-drivers Ratchet Chain Drills

Ratchet Bench Drills Ratchet Bit Brace

"Yankee" on the tool you buy means the utmost in quality, efficiency and durability.

Dealers everywhere sell "Yankee" Tools

NORTH BROS. MFG. Co., Philadelphia, U. S. A.

Make Better mechanics



3021-3023 LOCUST STREET CELEPHONE: BOMONT 694 SAINT LOUIS, MISSOURI

May 25, 1925.

Mr. F. E. Moskovics, President, Stutz Motor Car Company, Indianapolis, Indiana.

I have had a good deal of experience with the automobile business and know a lot about the usual relations between the automobile dealer and the factory and I want to tell you how automobile dealer and the factory in I have received from you much I appreciate the cooperation I have received from you and your organization. Dear Mr. Moskovics:

Most of the "factory cooperation" with the dealer consists of promises but yours has been marked by performance. We have yet to find an instance in which your work has not been of yet to find an instance in which your work has not been of help to us. Mr. Rawson, Mr. Andrews and other members of help to us. Mr. Rawson, have worked with us and the reyour Merchandising Department have worked with us and the results are shown in Stutz sales.

I had the pleasure of going through the Stutz factory and noticed with keen interest the way every part that goes in noticed with was examined and tested thoroughly before the "Stutz Six" was examined and tested thoroughly before the "Stutz Six" was examined and tested thoroughly before the "Stutz Six" without the Stutz factory and see with such could make a trip through the Stutz factory and see with such care the Stutz cars are assembled they would purchase a care the Stutz cars ademonstration.

We want to thank you for the wonderful cooperation you have given us the short time we have been selling Stutz cars and we know it will continue.

Yours very truly,

BENJAMIN MOTOR COMPANY

PRES DENT

JJB/ES

"BENJAMIN SERVICE - IS SERVICE"

If YOU would like to know how STUTZ co-operation can help YOU to build up YOUR business, I'll be glad to hear from you.

FREDRICK E. MOSKOVICS~ PRESIDENT
STUTZ MOTOR CAR COMPANY,
OF AMERICA - INC.
Indianapolis-Indiana

STUDEBAKER



This symbol means that Studebaker prices do not include the profit of outside body builders. This is another great sales advantage Studebaker dealers enjoy.

THE STUDEBAKER CORPORATION OF AMERICA, SOUTH BEND, INDIANA

THIS IS A STUDEBAKER YEAR

Another New and Powerful Asset for Nash Dealers

This week must be written down in motor car history as of outstanding importance.

For it marks the introduction of the new Ajax Six, built by the Ajax Motors Company, a subsidiary of The Nash Motors Company.

To all Nash dealers it is an event of the most farreaching significance.

For Nash dealers will be awarded the first opportunity to handle the new Ajax as rapidly as production permits distribution to parallel the organization.

And so, to the present great value of the Nash contract is now added another asset—one that will result in a greatly widened market, greatly increased sales volume, and a far larger annual profit than ever before.

NASH

THE NASH MOTORS COMPANY KENOSHA, WISCONSIN (1875)

25

Dealers Everywhere are flocking to Oldsmobile



OLDSMOBILE-SIX

PRODUCT OF GENERAL MOTO

ll6% INCREASE

Chrysler Breaking Sales Records While Demand Goes Still Higher

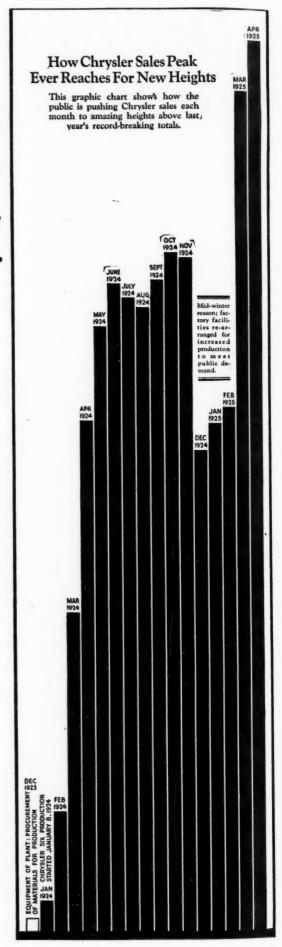
There, in a phrase, is the reason why this is the most valuable franchise in the automotive industry. Write now for details.

All Chrysler dealers are in position to extend the convenience of time-payments, on a plan that is attractive to the buyer.

CHRYSLER MOTOR CORPORATION DETROIT, MICHIGAN

MAXWELL-CHRYSLER MOTOR COMPANY OF CANADA, LIMITED, WINDSOR, ONTARIO

CHRYSLER



MOTORAGE

Vol. XLVII

Chicago, June 4, 1925

No. 23

Summary and Index of Important Events in

This Week's Automotive News

Detailed Stories from Motor Age Staff Writers and Special Correspondents Appear in News Section Beginning on Page 32

De Paolo in a Duesenberg Special wins Indianapolis race at new record of 101.13 m.p.h. Front drive Miller (Junior 8), driven by Lewis and Hill, is second, and Duesenberg, driven by Shafer and Morton is third. Page 10.

Industry looks for keener competition as producers prepare to meet situation. Page 32.

Preliminary figures have May production smaller than April. Page 32.

Dr. Melvin T. Copeland, director of Bureau of Business Research, Harvard University, will address A. E. A. summer meeting. Page 33.

Ajax producing average of 18 cars daily for display purposes. Output to be 100 daily by September 1. Page 33.

New Dodge Brothers factory at Toronto begins operations. To supply Canadian and export markets. Page 34.

Hupp sells body plant to Murray Body Corporation. Latter to manufacture all Hupp bodies. Page 35.

Notable gathering attends Indianapolis S. A. E. pre-race welcoming Silver anniversary dinner. Page 32.

Internal revenue collections for April exceed those for April, 1924. Aggregate shows loss. Page 38.

Moon Motor Car Company forms Diana Motors Company to market line straight eight. Page 39.

Ford orders \$1,000,000 worth of shock absorbers. To be offered as optional equipment. Page 36.

Mid-West transportation conference shows carrier interests in full accord on co-ordination as regards transportation. Page 36.

Willys-Overland earns over \$4,000,000 for May. Future prospects are good. Page 36.

Los Angeles dealers plan automotive department for public vocational school. Page 35.

Middle-west distributors hit by slack in demand. Good weather will restore buying. Page 34.

Flint Motors Company absorbs Mason Truck Co. Page 32.

N. A. D. A. to organize California this fall. Work starts November 1. Page 37.

Closer co-operation sought between dealers and customers in code of ethics adopted by Texas Dealers Association. Page 39.

Automotive industry hit as post season rain fall throws cloak of pessimism over northern part of California. Page 36.

N. S. P. A. list to show comparative volume of sales of various items for replacement parts throughout the country. Page 39.

Last stronghold falls; Isles of Bermuda to import two trucks. Page 39.

Receiver may sell Westcott car franchise. Two deals are pending. Page 38.

Gas economy necessary to prevent soaring price of gasoline. Page 38.

Rollin wins sweepstakes in Camp Curry-Yosemite economy run. Page 33.

Women buy for social preference, men for good motor, Jordan survey shows. Page 42.

S. A. E. formally installs Southern California chapter at Los Angeles. First in west. Page 38.

Ethyl gasoline to be tested by Baltimore to determine effect on atmosphere. Page 35.

In Next Week's Motor Age—First Article of a Series on Use of Pyroxlyn Finishes

Airplane view of 2½ mile Indianapolis Motor Speedway, where thirteen International Sweepstakes races have been held. Inset is photograph of Pete DePaolo just after he had won thirteenth race with new record of 101.13 m.p.h.



DePaolo in Duesenberg Sets New Indianapolis Record of 101.13 M. P. H.

Front-Drive Miller (Junior Eight) Driven by Dave Lewis and Bennett Hill and Duesenberg in Hands of Shafer and Morton Also Exceed 100 M.P.H. Average in Thirteenth International 500 Mile Sweepstakes

By SAM SHELTON

INDIANAPOLIS, May 30.

MEMORIAL of achievement to the honor of the courageous young Americans who have given their lives for the advancement of motor car design was written here today when three of the speediest and sturdiest of racing cars finished 500 miles on the brick speedway at an average of more than 100 miles per hour.

It was motordom's holiday, and amid patriotic and inspiring scenes more than 100,000 persons saw new accomplishments, brilliantly won, for the progress of a great industry and the advancement of those who live . today and tomorrow, as the highest tribute of respect and honor to those who have gone before.

Army airplanes overhead, American flags flying, a band of nearly 1,000 members rendering stirring and patriotic music, a day nearly perfect although a bit warm, made the occasion one in which the spiritual stimulation that goes with Memorial day, and all that it means in the history of our country, was not lacking.

As a spectacle none of the 12 International 500-mile speedway races that have gone before could have surpassed the tenseness and the thrills of this the thirteenth and safest of them all. It was a matter of great gratification to spectators and management that in establishing the new record of 101.13 miles per hour no driver was seriously hurt and the only accidents recorded were of a minor

To Peter DePaolo goes the honor of driving the win-

ning car, and the car itself, a Duesenberg Special, flashing marvelous speed at the driver's will, bestows a generous share of credit upon its builders, Fred S. and August Duesenberg of Indianapolis.

But an accomplishment no less worthy was that of the Miller front wheel drive entered as a Junior Eight by R. C. Durant

and driven at first by Dave Lewis and at the finish by daring little Bennett Hill. Making only two stops this car, racing at Indianapolis for the first time, showed consistent speed and performance that would not acknowledge defeat until the very last lap.

Second Consecutive Duesenberg Victory

Peter DePaolo hurled his Duesenberg through the 500 miles in 4 hours, 56 minutes and 39.47 seconds, and only 53 seconds later Bennett Hill flashed across the line for second place. DePaolo's average was 101.13 m.p.h. and that for the Junior Eight was 100.82. Wade Morton driving the Duesenberg Special that was started by Phil Shafer was third with an average of 100.18 m.p.h. These were the three cars to exceed the 100-mile average and furnish the thrills of a close finish. Harry Hartz in a

HOW THEY FINISHED

	Car and Place	Driver	Time	M.P.H.	Prize Money
1.	Duesenberg Spl	DePaolo and Batten	4:56:39.47	101.13	\$27,800
2.	Junior 8 (Miller).	Lewis and Hill	4:57:33.15	100.82	12,400
		Shafer and Morton			
		Hartz			
		Milton			3,000
6.	Miller Spl	Duray and Comer	5:09:34,11	96.91	2,200
		DePalma			
	Duesenberg Spl				1,600
		Shattuc	5:13:20.48	95.74	
		Bordino and Mourre.		94.75	1,400

The prizes for the first 10 positions were: First, \$20,000; second, \$10,000; third, \$5,000; fourth, \$3,500; fifth, \$3,000; sixth, \$2,200; seventh, \$1,800; eighth, \$1,600; ninth, \$1,500; tenth, \$1,400. Sums in excess of position prizes i nthe foregoing table were for lap winners.

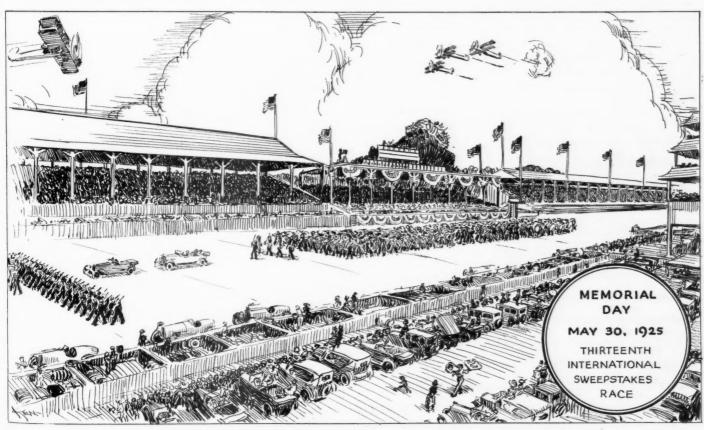
The Speedway management gave \$10,000 as consolation prize money to be awarded prorata among the cars not in the first 10 but still running when the twelfth car finished, according to position.

Miller Special brought in the fourth car to exceed the average speed of last year's winner. His average was 98.89 m.p.h. and the winning speed last year was 98.23, made by L. L. Corum and Joe Boyer in a Duesenberg. Thus Duese n b e r g has won the race two years in succession, and this year out of four of the cars

Duesenberg make entered in the race two were among the first three to finish.

The Junior Eight front wheel drive was a center of interest from the start. Another front drive Miller, a companion to this car, had been entered by Harry Miller, veteran builder of racing cars, and was to have been driven by Bennett Hill, but Hill found this car not to his liking and with the consent of the drivers he was permitted to start in a regular rear drive Miller and the other front drive was withdrawn.

When in the course of the race Hill's Miller was eliminated he was selected to relieve Dave Lewis at the wheel of the Junior Eight Miller and he demonstrated two things, first that the front drive creation has speed to burn, and second, that he is a master driver of that type of vehicle.



Just before the race started-Drawn by W. V. Kenworthy, Motor Age staff artist



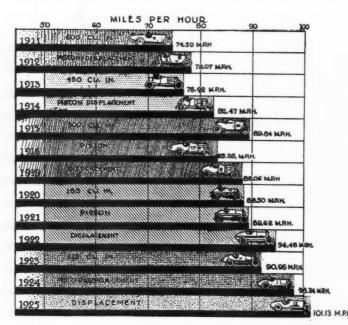
Three interested spectators: Left to right, James G. Allison, president Indianapolis Motor Speedway Co.; Capt. Eddie Rickenbacker of Rickenbacker Motor Co., who drove the official pace making car; Charles M. Schwab, steel manufacture and chairman of board of Stutz Motor Car Co., who was official referee

DePaolo was a promising contender from the start. Taking the lead on the first lap he held it until the fifty-fourth lap and then it was taken from him by his teammate, Phil Shafer in Duesenberg No. 9. DePaolo's car was No. 12. DePaolo at this time had slackened his speed somewhat, but a little later he demonstrated that at will he could take the lead and hold it. After he had relegated Shafer to second place he held the lead until he was forced to stop for a tire change and oil and fuel. Meanwhile Dave Lewis in the front wheel drive car had been steadily forging ahead, passing Shafer and others and taking the lead while DePaolo's Duesenberg was at the pit.

Batten Relieves De Paolo

When DePaola's car came out of the pit it was driven by Norman Batten-young DePaola was taking a much needed rest. Batten, although driving skilfully, could not maintain the pace set by DePaolo and gradually the Duesenberg fell back.

Batten remained at the wheel of the Duesenberg only 34 minutes and during that time the leadership fluctuated, but when the car was called in and DePaolo put back in the pilot's seat Lewis in his Junior Eight front drive was



Graphic story of increasing speed and smaller engines at Indianapolis

well in the lead. DaPaolo touched his Duesenberg with the magic that made it spurt forward with renewed energy. One after another of the intervening cars he passed until he was less than 16 seconds behind Lewis and gaining rapidly.

And then with the grandstands wild and almost breathless with the tenseness of the situation, Lewis signaled his pitmen and was seen to slow up. DePaolo instantly passed him and Lewis overran his pit, so that he had to go around again, losing additional time. Lewis, having driven about 450 miles without relief, was exhausted. Bennett Hill hopped to the seat and was off amid cheers.

Hill Shows Speed Flash

Then and there a new demonstration of speed was uncovered. From more than a lap behind Hill began to creep up on DePaolo. The front drive Miller-Junior Eight was performing marvelously. Well balanced, low, speedy, it took the turns almost as rapidly as the stretches. In the 188th lap the two cars were running almost neck and neck down the home stretch, the Duesenberg being a lap ahead. Just before going into the turn Hill passed DePaolo, getting into the same lap with him. With only 11 laps to go Hill set out to do his best and the fact that at the finish he was only about half a lap behind tells the story.

Behind the thrilling scenes of the track competition lies the contest of the master builders, Duesenberg and Miller, to produce America's fastest racing cars. For two years at Indianapolis Duesenberg has won, but always Miller has been but a shadow behind.

In this year's race 17 of the Millers took part and four of the Duesenbergs. Outwardly the cars are much alike, but mechanically there are wide differences. Both made use of superchargers this year, Duesenberg on all four of his cars and Miller on most of his. The winning Duesenberg last year was supercharged.

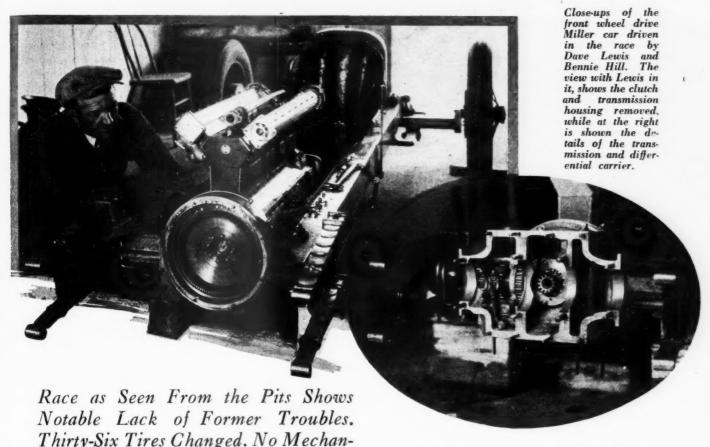
(Continued on page 16)

THE STARTERS

		D I I I I I I I I I I I I I I I I I I I
No.	Driver	Car
1.	Dave Lewis	Junior 8 Spl. (Miller front drive
2.	Earl Cooper	Junior 8 Spl. (Miller)
3.	Bennett Hill	Miller Spl.
4.	Tommy Milton	Miller Spl.
5.	Fred Comer	Miller Spl.
	Harry Hartz	Miller Spl.
6. 7.	M. C. Jones	Skelly Spl. (Ford)
8.	Ralph DePalma	Miller Spl.
9.	Phil Shafer	Duesenberg Spl.
10.	Jules Ellingboe	Miller Spl.
12.	Peter DePaolo	Duesenberg Spl.
14.	Robert McDonogh	Miller Spl.
15.	Dr. Wm. E. Shattuc	Miller Spl.
17.	Ralph Hepburn	Miller Spl.
19.	Ira Vail	R. J. Spl. (Miller)
22.	Pietro Bordino	Fiat Spl.
23.	Wade Morton	Duesenberg Spl.
24.	Earl DeVore	Miller Spl.
27.	Frank Elliott	Miller Spl.
28.	Leon Duray	Miller Spl.
29.	H. Jones	Jones-Whittaker Spl. (Miller)
38.	Pete Kreis	Duesenberg Spl.

CARS ELIMINATE	ED BEFORE THE	FINISH
Car and Driver	Cause of elimination	Time in race
No. 10 Miller, Ellingboo	Sheared key in steer- ing gear	36 min, 10 sec.
No. 19 R. J. Spl., Vail	Broken connecting rod	1 hr. 38 min.
No. 7 Skelly Spl., Jones	Transmission trouble	31 laps
No. 29 Jones-Whit. Spl.	H. Jones	2 hrs. 32 min.
No. 2 Junior 8 (Mil.) Cooper	Hit wall and bent	3 hrs. 10 min.
No. 17 Miller, Hepburn	Leak under gaso- line tank	3 hrs. 23 min
No. 23 Duesenberg, Gleason	Hit wall	160 laps
No. 3 Miller, Hill	Broken rear spring	

Technical View of Indianapolis Race



By B. M. IKERT and A. H. PACKER

HERE were those who said the little 122-cubic inch race cars which competed in this year's 500-mile Indianapolis race would "burn up" because of the superchargers.

ical Difficulties From Superchargers

There were also those who said the front wheel drive Miller, entered as the Junior Eight Special, would be tricky on the turns, and there was considerable doubt likewise in the minds of many, experts included, that the balloon tires would not come through such terrific punishment imposed by a long distance race over the heated bricks of the Hoosier oval.

But the cars did not burn up and the supercharger theory once more proved its worth. The front-wheel drive Miller proved conclusively that you can combine drive and steering in the front axle of a racing car and not have the car tricky at the turns.

And that balloon tires are practical for high sustained speeds such as they never encounter in commercial passenger cars is proved by the fact that in this year's race 36 tires were changed as compared with 37 last year. Besides, in last year's race the average miles per hour of the winner was 98.23 for the 500 miles, whereas,

this year it was 101.13 m.p.h., and the day was much warmer than at last year's race.

Aside from being an outstanding victory, therefore, for the eight-cylinder Duesenberg which started its record-smashing business last year in the 500-mile race, we have three big achievements in the way of, first, the application of the supercharger to maintain compression; second, the driving of the front wheels of a race car, and third, the use of balloon tires in racing.

Three Outstanding Features

Regarding supercharging the race showed that only a year was necessary to develop and perfect this mechanism. It will be recalled that the winning Duesenberg last year was a supercharged car and when it so ably demonstrated its superior speed and performance last year, it naturally followed that superchargers came into general use in all race cars of worth. And so, while all of the cars in this year's race were supercharge-engined jobs, the remarkable thing is that in no case did the supercharger mechanism give any trouble, nor can the supercharger be blamed directly or indirectly for any mechanical troubles which either put the cars far back in the running or eliminated them.

In fact, the supercharger makes possible several things that ordinarily cannot be had without such a mechanism. One has but to recall the many instances of valve trouble in the old days of cams which quickly opened the valves and just as quickly seated them, imposing a terrific hammering or pounding on the valves and seats. All this is done away with when the supercharger is used, because it allows the use of cams with easy opening and closing characteristics, saving the valves and springs materially. That is one reason why in this year's race there was not a single case of valve trouble on any of the cars.

And that is not all. Valve timing does not have to be set to a hair as in the days before the supercharger and it may be surprising to many to know that the timing of these special race creations is practically the same as in stock engines of passenger cars. As Mr. Duesenberg ably expresses it "Valve timing doesn't seem to make much difference one way or another, the supercharger takes care of it."

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While the Duesenberg, Miller and Fiat cars are agreed on the use of superchargers they differ greatly in

the type and location of the mechanism which forces the mixture under pressure to the cylinder. In all cases the superchargers, meaning the blower proper, are driven by mechanical means from the engine, but in the Duesenberg it is placed alongside the engine and in the

Miller cars, behind the engine. while in the Fiat it is directly in front of the engine and driven from off the nose of the crankshaft. The Duesenberg and Miller superchargers are of the centrifugal type and that of the Fiat of the Root's blower type. The various types of superchargers are of the centrifugal tail in a previous issue of MOTOR AGE, with the exception of the Fiat.

The Fiat Supercharger

The Fiat blower draws in air through a funnel shaped pipe, which is located at the right of the engine near the front, this air then being passed through a special radiator below the regular one. This is done to cool off the air which is heated due to being compressed, for the air if excessively heated when entering the engine would reduce the efficiency.

From this radiator a large pipe in the right frame channel carries air back to the carbureter, through which it passes up through the intake manifold to the eight cylinders.

At the rear of the engine, however, is a pump, driven from the crankshaft by means of gears and taking a portion of the air which comes back

WHAT BROUGHT THE

CARS INTO THE PITS

Name Fiat

Jones-Whit. Duesenberg

27 Miller

8 Miller

3 Miller

14 Miller 24 Mille

3 Miller

3 Miller

27 Miller

28 Miller

5 Miller

Miller

Miller Miller

Jones-Whit. Duesenberg

Nature of Trouble Carbureter Throttle

Stuck Overoiling (changed

plugs)
Gearshift Lever
Tightened Shock Absorbers

Tightened Shock Ab-sorbers

Tightened Shock Ab-

Tightened Shock Ab-

sorbers Adjusted Shock Absorb-

Tightening Steering Gear Adjusted Shock Absorb-

Adjusted Shock Absorb-

ers.
Took Fire
Tightened Shock Absorbers
Loose Fuel Tank Strap
Replaced Cap Gasket
Tightened Shock Absorbers

sorbers Ignition Cut Out

The most consistent car to come into the pits was the Skelly Special, which made eight pit stops, chiefly to change plugs which seemed to foul because of overlubrication.

Broken Truss Rod

How the supercharger is placed on the Duesenberg cars. The installation is the simplest of the cars which competed

from the air radiator. This pump also operates to draw gasoline from the tank and mix the two, sending a rich mixture of air and gasoline to the carbureter. Here the rich mixture under pressure from the pump meets the air stream from the blower, also under pressure, and the combination serves as fuel for the engine.

The mixture on its way to the carbureter must pass through a tube at the top of an equalizing chamber in order that the impulses of the pump may not be transmitted to the carbureter and cause erratic action. From the bottom of this equalizing chamber, a pipe connection leads to a gage on the instrument board, while another gage is connected to the air pipe, just before it reaches the carbureter. This enables the driver to see that the proper pressure ratio is maintained at all times.

Coming to the front-wheel drive Miller car which performed so admirably in the hands of Dave Lewis and Bennie Hill, we find some interesting things. Those who saw the car perform are agreed it romped around the turns as smoothly, if indeed not more so, than any of the rear wheel driven jobs. It did not skid as many said it would. It was not unmanageable. Nor did front wheel tires suffer any from the double duty of taking both the drive and the steering.

Makes Car Lower

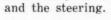
By driving the front wheels it is possible to get the car much lower, chiefly because the drive shaft to the rear is eliminated. It also is possible to get a very good weight distribution and this was in evidence from the way in which the car held the track. In a vehicle of this kind there is no tendency for the rear of the car to swerve around to the front, especially since the rear wheels have a slightly narrower tread, which imparts a trailing effect. Also, since the right front wheel, especially, is driven positively, the often destructive effect

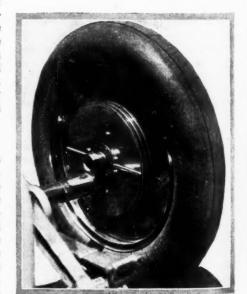
of centrifugal force is minimized hecause the back axle does not tend to push the front wheel and impart to

the latter a sort of shearing effect. Thus instead of having all of the centrifugal force of the car literally "pile up" on the right front wheel on a track only slightly banked as compared to the board tracks, we have the front wheel drive car running out of such a condition by virtue

of applying power to the front wheels and allowing the rear wheels to trail.

Steering should not hamper the application of power to the front wheels nor should the driving of the wheels play havoc with the steering. This is merely a question of correct design and a proper selection of materials. It is well to bear in mind that in a conventionally driven car, race car, or otherwise, the front axle is dragged along by the front springs and steering may be hampered by the action of driving the rear wheels as is demonstrated when a car skids and one of the front wheels acts as a pivot around which the entire mass revolves. It is easy to see that driving the front wheels overcomes this tendency. When a front wheel which is positively driven encounters an obstruction it rolls over it because it has traction and it makes no difference how much the front wheels are turned to the right or left. As long as the power is applied to the wheels the car will maintain the desired direction of travel, assisted as has been pointed out by the trailing action of the rear wheels, the latter, in the case of the Miller front-wheel drive car, merely running free on a dead axle.





Balloon tire, 30 by 5.25 and carrying about 30 lbs. air pressure, as used by the cars this year. This one is on the frontwheel drive Miller

While it is true that the cars in this year's race smashed all previous records, so far as the first four cars to finish were concerned, and front wheel drive came into its own, it might be said in view of modern progress in the design of automotive vehicles that the day is not far hence when we can expect to see race cars in which all four wheels are driven. Excellent results have been secured in the past by driving the rear wheels only and in this year's race the Lewis-Hill driven front-wheel drive Miller certainly proved beyond a doubt what can be accomplished in driving the front wheels only. Now then, if both methods of drive have their advantages, surely it is not unreasonable to assume that vehicles of the future may be built incorporating the salient features of both.

The first response to this probably will bring considerable talk of complication, but complication after all is nothing to be feared when it produces a more efficient and better performing car. The supercharger, for example, has complicated the mechanism of the race car of today, but we have faster, more dependable and better race cars than we ever had. Driving the front wheels on the Miller car of Dave Lewis complicated the front end of the vehicle, but we have only to look at the race results to see how this complication eventually manifested itself on the performance of the car.

All of the cars used Firestone balloon tires 30 by 5.25 and carried on the average about 30 lbs. pressure. Those who expected to see the balloon tires "fall down" were disappointed, because the tires gave a most remarkable account of themselves. It is the first time the balloon tire has been tried in competition on the Hoosier track and that it came through with flying colors is clearly shown by the result. There was one less tire change, to be exact, than in last year's race.

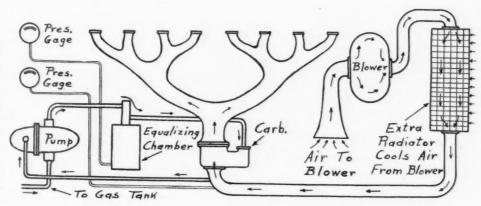
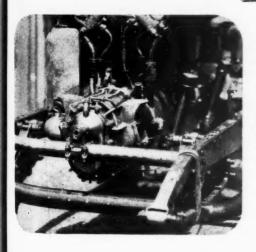
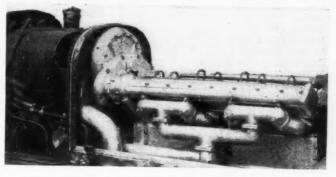


Diagram showing the path of the air and fuel in the Fiat supercharger. The location of the radiator for cooling the air from the blower is shown in the photographs of this car on page 22

Pit Stops for Tires, Oil and Gas R.R. L.R. R.F. L.F. Water Gas Oil Miller (McDon.) Miller (Hill) Dues. (Morton).... Miller (Comer) Dues. (Schafer).... Dues. (Kreis) Miller (Hill) Miller (Comer) Dues. (Schafer) .. Jones-Whit (Jones) Miller (Elliott) Miller (Hartz) Miller (Cooper) Miller (DeVore) Miller (Shattuc) Dues. (De Paolo) Miller (Lewis) Miller (Duray) Dues. (Morton) .. Miller (DePalma) Miller (DeVore) Miller (Milton) . Miller (Hepburn) Miller (McDon) Dues. (Kries) Miller (Elliott) ... Miller (Comer) Miller (Elliott) Miller (DePalma) Fiat (Bordino) ... Miller (Elliott) Miller (DePalma) Miller (Shattuc)



At the left is shown the location of the Root's blower type super-charger on the Fiat driven by Bordino and Mourre. The blower mechanism is driven from off the nose of the crankshaft



On the Miller racing cars the supercharger is placed at the rear of the engine and driven by gears from off the two overhead camshafts. Note the sharp bends in the manifold, quite the contrary of former days

These pictures show some of the activity which took place at the pits. Car No. 2 is that of Earl Cooper and here is shown a pitman in the process of slipping on a wheel and tire which in these days is a matter of some 15 or 20 seconds.



All told there were 36 tires changed in this year's race and of these 18 were right rears, 10 were right fronts, 6 were left rears and two were left fronts, the latter being precautionary changes made when Hartz and Duray changed tires all around. It is interesting to note that on the winning car only one tire was changed, while on the front drive car which earned second place, a front and rear were changed on the right side, illustrating the effect produced by centrifugal force on the turns.

distant as regular features of passenger vehicles. New things are often first tried out in this great outdoor automotive laboratory, which has contributed so much to the development of the motor car of today.

Pete De Paolo Wins Indianapolis Race at 101.13 M.P.H.

The day of the balloon tire has

come. Perhaps the supercharger and

the front wheel drive are not far

(Continued from page 12)

The racing cars this year were permitted a maximum of 122 cubic inches piston displacement, but next year this will be reduced to 91 inches and further efforts will be made to develop high speed, small bore engines.

Charles M. Schwab, president of the Bethlehem Steel Corporation, and chairman of the board of the Stutz Motor Car Corporation of America, was official referee of the race. He was one of the principal speakers at a dinner given the evening preceding the race at the Indianapolis Athletic Club by the Indiana Section of the Society of Automotive Engineers and the Indianapolis Chamber of Commerce.

THOMSON APPOINTMENTS MADE

LYNN, Mass., May 30.—The Thomson Electric Welding Company, manufacturers of electric welding machines, made known the following district office appointments today: James A. Muir, General Motors Building, Detroit, representative in the state of Michigan, C. E. Seifert and M. C. Littlefield will repre-

sent the Lynn concern in Ohio, Kentucky, Western Pennsylvania, Southern Indiana, New York State from Syracuse north to the Canadian line and a few cities in the province of Ontario. Mr. Seifert and Littlefield will make their headquarters in the Leader Building, Cleveland.

LACQUERING SCHOOL OPENED

ST. LOUIS, Mo., June 1.—The Enamo Company of Missouri, Inc., 3952 Olive Street, factory branch of Holbrook-Hughes Corporation of New York, manufacturer of Enamo-Lacquers, has opened a school at its buildings to train men in the work of lacquering automobiles.



The tire which blew on Comer's car causing him to hit the wall. This picture need cause no anxiety as the future of balloon tires for racing because the tires performed as well or better than the racing cords of past years

TIRE STOPS

rear Right Rear	Left Rear	Right Front	Left Front
Miller (McDonogh)		*	
Duesenberg (Morton) *			
Miller (Comer)*			
Duesenberg (Shafer) *			
Duesenberg (Kreis) *		.4.	
Miller (Comer)*		*	
Duesenberg (Shafer) *	-		
Miller (Elliott)*	-	-	
Miller (Hartz)*	*	*	*
Miller (Cooper)*			
Miller (DeVore)*	-		
Miller (Shattuc)*	-		
Duesenberg (De Paolo)	*		
Miller (Lewis)*		*	
Miller (Duray)*		*	*
Miller (DePalma)	*	-	
Miller (Milton)		-	
Miller (Hepburn) *		-	
Miller (McDonogh)		*	
Miller (Elliott)*		- de	
Miller (Comer) *		=	
Miller (Elliott)	-		
Miller (DePalma) *			
Total 10	7	-	-
Total	7	9	2
Miller (Shattuc)*			

Specifications of the Indianapolis Race Cars

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	12	GLTINDERS5 以	Yes	No	:	:	4	:	1	Yes	× 5	
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The Smith Special, Super Ford and Kess Line Special did not qualify

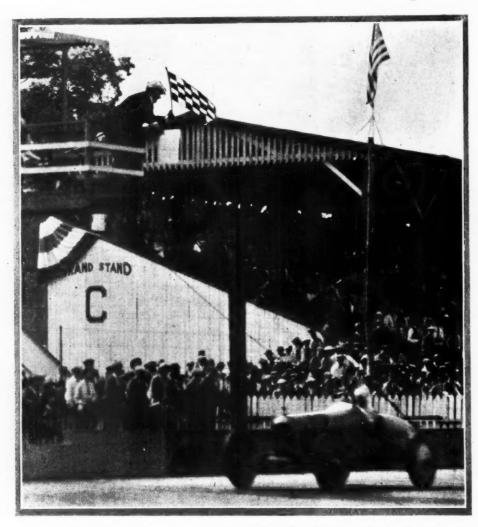
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A Bulletined Story of the Race



The checkered flag of victory waves for daring little Pete DePaolo, driving Duesenberg No. 12 over the finish tape

Indianapolis, May 30.

Indianapolis, May 30.

NDIANAPOLIS is all set for the thirteenth annual grind on the celebrated brick speedway. As usual, only more so, the city is packed with people from all points of the compass. The weather bureau promises good racing weather but likely it will be hot out here at the track. Last year when we saw Joe Boyer and L. L. Corum wheel a Duesenberg to victory it was chilly enough for light overcoats.

Right now, at 8 o'clock, you can hear any sort of speculations. Many questions are being put which only the end of the race will answer.

For one thing, people are wondering what the front wheel drive will do. It will be driven by Dave Lewis—the Junior Eight Special. While Lewis did not make anything like the time Duray, De Paolo and Hartz did in the trials, there's an idea in some quarters that the front wheel drive will step up with or ahead of the flock in actual battle.

Then, here and there you find strong Fiat boosters. They think Bordino has more than a fair chance. Also—what about Duray?

BY CLARENCE PHILLIPS

Duray certainly showed a lead foot in the trials, grabbing the pole position at an average of 113.19 miles an hour. Right behind him by an eyelash in the trials Pete De Paolo, the Duesy flyer, made a strong bid for notice. Pete's record makes him look good and it might be said that he is easily one of the high favorites. As for records, though, there are others in the race. Tommy Milton at last count stood at the head of this year's class on points. Up in the high group also were Cooper, Hartz and Bennie Hill.

The way the betting odds stand now you can't do better than even money on any of the favorites. "That Fiat is really dangerous," an eminent technical man just hissed in my ear. Another for the Fiat.

Bordino's red Fiat, No. 22, is the first race car out on the bricks. It is headed for the pit. Only 8:55 now. The fuss begins at 10—and sharp, according to tradition. Crowds are pouring in in

The Thirteenth Indianapolis Derby's Step-by-Step Progress as Seen by a Witness in the Press Pagoda

THIS is the "running story" of the race. It deals with the contest as it progresses and is intended to give the picture of shifts, troubles and spectacular high spots as seen by a press stand witness.

It is not intended, however, to be an authentic record of happenings and it might omit some features that another witness would have jotted down. Everyone doesn't see the same things at a contest of this nature, but the press stand observer has an advantage over thousands of others which enables him to draw on his impressions for a picture which is reasonably accurate and complete.

spite of the fact that the place looks jammed already.

Airplanes are sailing overhead and movie men are grinding their picture mills. Many thousands have lunch boxes with them—here for the day.

A rabbit scared up from somewhere is running down the track. He keeps on running on the bricks because there is no place for the poor devil to turn out and the whoops of the stands only make him set back his ears and beat it all the harder. "It's the pacemaker," wheezes my technical friend.

He's wrong this time, though, for the pacemaker, Eddie Rickenbacker, in a car bearing his own name comes in front of the press stand.

The announcer tells us that M. C. Jones will drive No. 7, the Skelly Special. with Fred Harder as relief driver. We'd like to have this thing start.

More information from the megaphone. The Super Ford Special, with Belt aboard, was scratched, as was the Smith Special, which was to be piloted by Harry Thickstein and Tom Alley's Kess Line Special.

That leaves 22 starters. Last year 21,

still it is a small field. It is small but it is high class. Crowd estimated now at 145,000, including the several gentlemen pushing me from behind.

Drivers Take Positions

There goes the first bomb. The race will be on in 20 minutes. The drivers are forming in position. Duray, in his Miller job, takes the pole.

Another bomb. Drivers and mechanics gather in center of the track to be photographed. Howard C. Marmon, of the board of judges, forecasts an average of 102 miles. Also, that the winning car will only have one tire change—the right rear.

The mechanics are cranking up. There is the roar of engines rearing to go and plenty of smoke. Not as much smoke, though, as in the old days.

Seth Klein, starter, comes out on his roost with the red flag.

The pacemaker starts—the pack is on his heels and the game is under way.

To add to the thrill of the start two airplanes are zooming over the stands. Necks are stretched southward and the crowds yell as the drivers flash over the bricks past the stands. Peter De Paolo, in a Duesenberg, is in the lead, Duray in a Miller is next and then Harry Hartz in a Miller.

The leaders are close together and, of course, the entire crowd well bunched. No one was left at the post on the start. Pete De Paolo did have a hard time getting off and surprised the crowd when he leaped into the lead on one round after that handicap. The Jones-Whitaker, with Herbert Jones at the wheel, is tagging the crowd.

Elliott First to Pits

Frank Elliott in a Miller goes to the pit. First pit stop. The Skelly Special, handled by M. C. Jones, next to the pit. First lap was made in 1:26:65 at the rate of 104 miles an hour. Last year Joe Boyer reeled it off at 98.39 m.p.h. but got into trouble as a consequence. The first two laps were made at an average of 104.80 m.p.h.

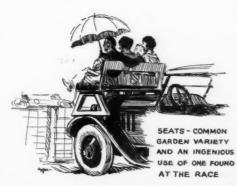
On the fourth lap De Paolo is well in the lead. Duray still second; Earl Cooper, in a Miller, third; Hartz, in a Miller, fourth, and Ralph Hepburn, in a Miller, fifth. The race is just getting well under way. Cooper is stepping out like he means business.

Cooper has passed Duray and taken second place. Earl is still going fast. The first 10 miles was clipped off in 5:45.04.

Bordino with the Fiat goes to the pits. His supercharger is the noisiest one on the place.

De Paolo has a 200 yard lead and Cooper is hotly followed by Duray. Fred Comer, in a Miller, is coming up some.

Bordino is away from the pits again—stopped for 55 seconds, changed spark plugs. Cooper is increasing his lead on Duray. Frank Elliott to the pits for spark plugs. De Paolo increases his



lead over Cooper—Duray is about 100 yards behind Earl.

De Paolo Is Leading

Announcer says the Jones-Whitaker stopped on a flag for instructions. The first 25 miles was reeled off in 14:24:09

—De Paolo leading. Skelly Special drops in on pitmen again—this time to change spark plugs.

Positions of leaders at end of first 25 miles: De Paolo, Cooper, Hartz, Duray, Lewis, Hepburn, Ellingboe, Shafer, Milton, Mourre. Last year an average of 99.15 was made for this distance. They are galloping along five miles faster than last year.

De Paolo's car is smoking some. Ralph De Palma, in his Miller, slows down at pit, points to a tire and goes on by. Next time around finds Ralph at pits. De Paolo laps Shattuck in a Miller, Pete now being on his 18th lap. De Palma spent 50 seconds at pit for shock absorber adjustment.

Moss is now driving Jones-Whitaker Special for Herbert Jones' relief. The first fifty was run at an average rate of 104.13 m.p.h. De Paolo laps Mourre. He is about 14 seconds ahead of Cooper. Pete is running like a watch. Hill to the pits.

Bordino, the Italian driver and only foreign entrant, is two laps behind De Paolo. Pete dashes by several of his competitors, the crowd cheers and Cooper seems to be gaining right now on De Paolo.

Bennie Hill goes to pits for shock absorber adjustment and is out in 1 minute and 25 seconds. Ellingboe goes into

pits for same purpose and is off in 1 minute and 10 seconds.

First Car Out of Race

Ellingboe sheered a key on the steering gear and his car, a Miller Special, is out of the race. First car to get out. The clash at this point is between De Paolo and Cooper. Harder has taken the helm of the Skelly, its second relief.

De Paolo lapped his Uncle Ralph at 75 miles. The positions at 75 miles of the first group: De Paolo, Cooper, Hartz, Lewis, Duray, Shafer, Hepburn, Mourre, De Vore, Milton.

Skelly again to pit. Cooper is closing the distance between himself and the leader. The fight is still between Pete and Earl. Neither has gained much additional advantage in some time, although they are seesawing considerably. Lewis in the front wheel drive is making a steady race. Now in fourth position and gaining on Hartz in third.

Ellingboe has relieved Hill in a Miller. The car is not in the first 10 of the field at this time. M. C. Jones again takes wheel of the Skelly.

The first 100 miles was zipped off in 57:44:94 at an average of 103.89. Last year's average 98.35. They are traveling

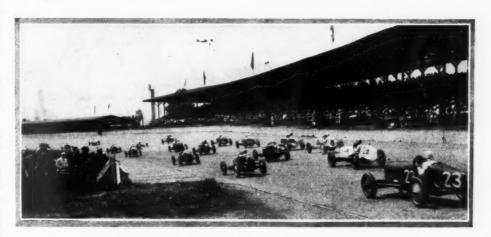
Positions: De Paolo, Cooper, Hartz, Shafer, Lewis, Duray, Hepburn, De Vore, Mourre, Milton.

De Paolo, Cooper and Hartz have been holding well to their present positions. Shafer has come from sixth place to fourth in his Deusy. McDonogh was sent to pits by broken truss rod and for gas. Shafer passes Cooper for second place. A race is on between Shafer and Pete, his stable mate. They are doing some interesting grinding.

Time for 125 miles: 1:12:12.18. Average 103.87 m.p.h. Last year's average 98.43.

Shafer Passes De Paolo

Shafer passes De Paolo and takes first position. The fans yell. Everyone watches to see how the case will stand on the next turn. They pass us, Shafer 75 yards ahead. The Duesenberg stable sits pretty at this period. Cooper, in third place, is a quarter of a mile be-



Getting under way for the start of the record-breaking race. The speedy cars are going into the north turn on the first lap

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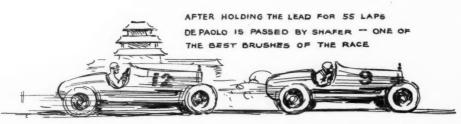
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hind. Bordino now three laps behind. Mourre goes to pits.

Time for 150 miles is 1:26:22 at an average of 104.20 m.p.h. Last year's average 98.36. Skelly to the pits again. Duray is slipping. Held fifth place for some time, but now in sixth.

Ellingboe, driving Bennie Hills' mount, turned around three times at north turn when right rear tire went flat. On 61st lap. Ira Vail visits pits.

De Paolo has jumped back into the lead amid howls from the stands. The boy is popular. Ellingboe put in 1 minute and 28 seconds at pits for tire, gas, oil and adjustments.

Bennie Hill driving No. 3 again. Vail passes out of the picture with the R. J. Special with broken rod. Skelly goes to pit.

Time at 175 miles: 1:40:47.26. Average 104.18 m.p.h. Last year 98.36 was the average. Order: De Paolo, Shafer, Hartz, Lewis, Cooper, Duray, Hepburn, Milton, Bordino, Mourre.

Cariens relieves Hill. Hartz goes from fourth to third place Lewis goes from sixth to fourth place. Cooper slumps from third to fifth. These changes in the last 25 miles.

Bordino goes to pit. Jones relieves Moss in Jones-Whitaker job. Shafer's right rear tire flat. Cooper passes Shafer during former's pit stop. Shafer off again but lost lap to De Paolo, who is leading. Right rear tire goes flooey for Pete Kreis in a Deusy. The right rears are catching it. That was predicted. The turns on these bricks are especially hard on them.

Bordino Given Relief

Mourre, who was relieved by Gleason, is driving for Bordino in the Fiat. Bordino injured hand and went to hospital.

Some excitement on the south stretch. It develops that the Jones-Whitaker car, driven by Herb Jones, hit the wall and caught fire, Jones jumping out and escaping injury. The car is out of it.

There are 18 drivers in the race now out of 22 starters.

Time at 200 miles: 1:25:36.89. Average 103.79. Last year's average 98.38. Looks like a track record again is on the way. Order at this time: De Paolo, Hartz, Lewis, Duray, Hepburn, Shafer, Cooper, Milton, Kreis, Gleason (driving for Mourre).

Hartz passes De Paolo on the 86th lap. In the last 25 miles Lewis has come up to third from fifth place. The front wheel drive is working well.

Now De Paolo passes Hartz and again takes first place. Elliott to pits. Tire trouble. De Paolo lengthens lead over Lewis. De Palma is six laps behind his flashing nephew, De Paolo.

Haibe takes Elliott's seat on No. 27, a Miller.

Time at 225 miles, 2:10:12.2. Average 103.68 m.p.h. Last year's average 98.63.

Positions: De Paolo, Hartz, Cooper, Lewis, Hepburn, Duray, Shafer, Milton, Gleason, Kreis.

Right Rear Tires Are Going

Hartz goes to pits. Right rear tire. Shafer to pits. Ditto. Jerry Wonderlich now driving for Bennie Hill. Jones-Whitaker is back in race after the fire. Referee rules it can continue.

Time at 250 miles: 2:24:59.31. Average 103.45. Last year's average 98.78.

Order: De Paolo, Lewis, Hepburn, Duray, Shafer, Hartz, Milton, Gleason, Shattuc.

De Paolo goes to pit for new right rear tire. Hartz hit wall at south turn, with blown right rear tire. Not hurt. Right rears continue to go. These are all balloon tires today. Their introduction at the Indianapolis track.

Lewis is now in the lead as De Paolo stops at pit. The Jones-Whitaker is out of the race.

Norman Batten is now driving for De Paolo, the latter having blistered his hands.

Hepburn is in lead at 108th lap. Wade Morton, now driving Mourre's original mount, goes to pits.

Time at 275 miles: 2:41:36.48. Average 102.10 m.p.h. Last year's average 98.08. Order: Hepburn, Cooper, Shafer, Batten, Lewis, Hartz, Milton, Morton, Kreis, De Palma.

Comer relieves Duray. Eighteen cars still in race. The scene has shifted considerably in the front ranks. Gleason now driving the Mourre mount, Morton getting out. Schultz is driving for Earl De Vore in a Miller. De Palma goes to pits, followed by Hepburn on his 116th round. Milton to pits.

Corum Relieves De Palma

I. L. Corum, co-winner with Boyer last year, relieves De Palma in a Miller. Hepburn holds lead.

Ellingboe in a Miller Special, originally



driven by Bennie Hill, is out of race on 68th lap. Broke rear spring and had bearing trouble. Duray took on oil, gas and two tires in 30 seconds.

Time at 300 miles: 2:56:33.50. Average 101.95 m.p.h. Last year's average 98.17. Order: Hepburn, Cooper, Shafer, Batten (for De Paolo), Lewis, Hartz, Milton, Kreis, Gleason, Duray.

Hepburn loses lead to Cooper on 121st lap when former stops at pits for gas, oil and water—also right front and right rear tires. Off again in 35 seconds.

Cooper is leading nicely. Has not been to pit yet.

Cooper just hit the wall on the south turn—his 124th lap. Wasn't hurt.

Lewis goes into lead, with Cooper out, followed by Batten in De Paolo's chariot and Hepburn.

De Paolo is back in No. 12, replacing Batten, who relieved him. He is in third place.

Time at 325 miles, 3:12:51.97. Average 101.11 m.p.h. Average last year 97.77. Order: Lewis, Shafer, Hepburn, De Paolo, Hartz, Milton, Kreis, Gleason, Duray, Corum (for De Palma).

Pete Steps on It

De Paolo has come up to third place but Lewis has a long lead. De Paolo is moving ahead like a bullet. Kreis goes to pit.

Elliott, who was relieved by Haibe, is again driving the No. 27 Miller.

Time at 350 miles, 3:27:23.24. Average 101.26 m.p.h. Last year's average 98.01. Order: Lewis, Shafer, De Paolo, Hepburn, Hartz, Milton, Kreis, Gleason, Duray, Corum (for De Palma).

Bennie Hill is driving McDonogh's Miller. De Paolo passes Shafer and chases Lewis. Comer is in No. 5, his own mount. Hepburn gets third position temporarily but Shafer takes it from him. Hartz to fourth position. Tommy Milton crawls up a notch to fifth place. Lewis, the leader, is on his 149th lap.

De Paolo continues to gain on the front wheel drive. Shafer is a lap and a half behind Lewis, in third place.

Time at 375 miles: 3:42:01.15. Average 101.34 m.p.h. Last year average 98.34. Order: Lewis, De Paolo, Shafer, Hartz, Milton, Gleason, Duray, Kreis. Corum (for De Palma), Mourre (for Bordino).

Lewis had held lead since the 325 mile mark was reached.

De Palma now driving No. 8 again. Corum stepping out.

McDonogh now driving No. 14 again, replacing Bennie Hill, who relieved him.

Looks Like an Accident

Shafer goes to pits on 160th lap. Trouble of some sort at north end of track. People standing up and looking.

Time at 400 miles: 3:56:30.20. Average 101.48 m.p.h. Last year's average 98.21. Lewis, De Paolo and Shafer still lead.

Morton driving No. 9 for Phil Shafer

a Duesenberg.

Bordino is again driving the Fiat.

Here's the report of the accident that's been bothering us. No. 23, a Duesenberg

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Special driven by Gléason as relief, hit a side wall. Car is out of the race, but Gleason is uninjured.

Elliott was in the pits 11 seconds for a tire change.

Time at 425 miles: 4:11:14.52. Average 101.49. Last year's average 98.36. Lewis, De Paolo, Shafer, Hartz, Milton and Duray are heading the procession.

De Paolo Again Leads Pack

Lewis slows down as if to stop at pit, but does not stop. Goes on around. Lewis stops at pit on 173rd lap and De Paolo again takes the lead.

Hill drives the front wheel job for Lewis.

Shafer goes to second place, Hill is third and Hartz and Milton next in order. Hill takes in after the two ahead of him, but he is little more than a lap behind Pete. It is warming up into a race. Hill is stepping on the gas with a heavy foot.

On the 181st lap Pete finds Bennie still fighting to overhaul him but Pete now widens distance. Bennie is some 150 yards behind Pete—plus a lap. The crowd is excited. It wants to see a good finish and the end is not far off now.

Time at 450 miles: 4:26:28.87. Average 101.32. Last year 98.18. Order: De Paolo, Hill (for Lewis), Morton (for Shafer), Hartz, Milton, Duray, Kreis, Shattuc, De Palma, Bordino.



Fifty more miles to go. The question is: Will the front wheel drive be able to overtake De Paolo in so short a distance? Pete has a lap to the good and is breezing along at a rapid clip.

But look at that Junior Eight! It certainly takes the turns beautifully. On the 184th lap the Junior Eight takes in considerable slack. It looks like an almost impossible thing for Hill to do the trick. A little pit trouble for Pete, however, and it might be all off for him as to first place.

Hill nearly overtakes Pete in front of the stands. The fans are yelling again. They like this sort of stuff. Hill is about to go by Pete at the turn when the little Duesy driver ties a brick on his foot and shoots around the curve—ahead—and a lap to the good on Bennie.



A thrilling finish is in sight even if Peter has this lap to the good. On the 188th lap De Paolo and Hill continue the fight. Morton, driving for Shafer in third place, is about two laps behind.

Are Running Abreast

The people in the stands are on their feet, yelling. Bennie and Peter are about abreast. Around they come again. Now the Junior Eight is about 100 yards ahead of Pete and going at a terrific rate. Pete still has nearly a lap to the good on the 500 mile distance.

Again they swing around in front of us. Not much change in relative positions, but both are moving mighty fast. Hill is gaining rapidly.

On the 196th lap De Paolo is only half a lap ahead of Hill. Hill goes by. It seems like Pete is a long while coming along. The suspense makes everything quiet, save for the zooming of the different cars as they rush past. You can't keep from wondering if De Paolo has had trouble.

But by us he comes, his car apparently in good order. The answer to his late arrival is found likely in two places. First, in the high speed of the Junior Eight and next in possible signal from his pit to take it easy and not burn up



his mount now. For, barring accident, he seems to have the race tucked away.

De Paolo starts on the 199th lap. Seth Klein, the starter, is ready with flags. De Paolo is given the green flag. More yelling. The last lap of De Paolo's distance is started.

The checkered flag is waved as De Paolo dashes past the finish line. How they yell. Peter continues the grind as a safeguard against misunderstanding—then is given a big ovation as he drifts up toward Fred Duesenberg and the Duesenberg pits.

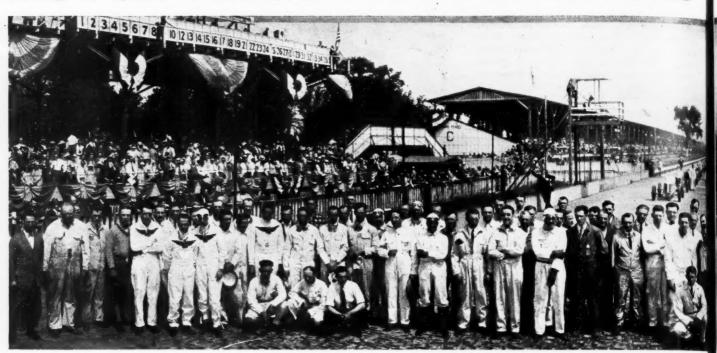
He made a new record for the Indianopils speedway, stepping off the distance in 4 hours 56 minutes and 39.47 seconds. His average was 101.13 m.p.h. against 98.23 made last year by the Boyer-Corum team, also in a Duesenberg, the best previous record.

Hill, driving the front wheel drive Junior Eight for Dave Lewis, finished in 4:57:33.15 at an average of 100.82 m.p.h. Morton, driving a Duesenberg for Shafer, finished in 4:59:26.79, at an average of 100.18 m.p.h. Hartz finished with an average of 98:89 m.p.h. in fourth place and the first four beat the record made last year. Information about the other finishes will be found elsewhere in this issue of the magazine. It was a fine exhibition of speed and crafty driving. The next problem is to get out of this mob and back to the hotel.

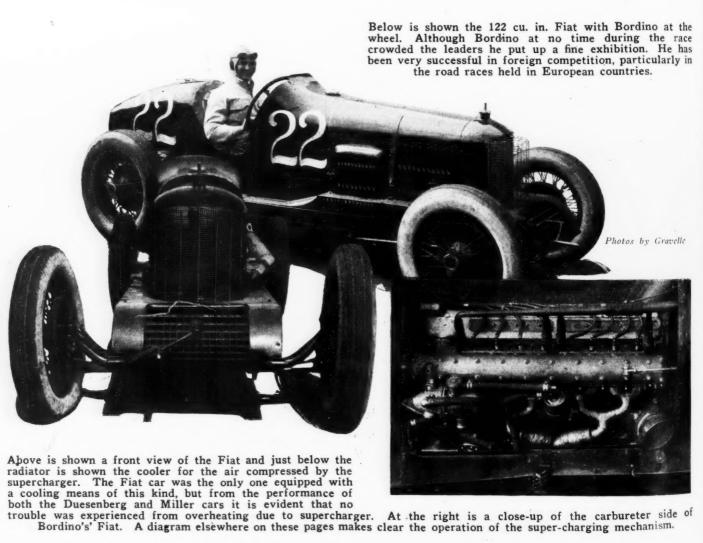
HOLLER JOINS CHEVROLET

DETROIT, June 1.—William E. Holler, former vice president and general manager of Flint Motor Co., has joined the sales department of Chevrolet Motor Co. He will be attached to the main sales offices in Detroit. Mr. Holler formerly was general manager of Imperial Wheel Co., Flint, and previous to that was an assistant to W. C. Durant in New York.

MOTOR AGE'S PICTURE PAGES



Line up of drivers, mechanics, pitmen and race officials just before the drivers jumped into their car and followed the particle the 200 laps require



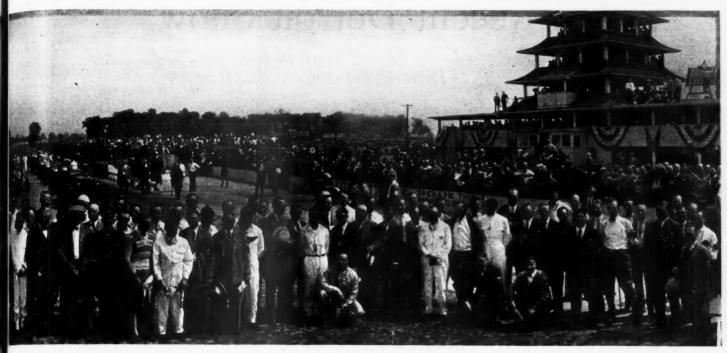
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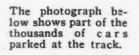
OF THE INDIANAPOLIS RACE

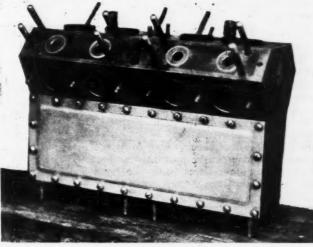


maker Capt. Rickenbacker for the initial lap around the course. This first lap incidentally is not counted officially as one of to cover 500 miles.



Rear view of the Miller racing engine showing the location of the super-charger blower. The air enters in the opening shown at the center of the housing and an equalizing tube is used shown at the top of the pipe leading from the supercharger in order that the end cylinders will not be starved.





One of the cylinder blocks used in the Miller racing engine. Since the engine is an eight cylinder, two of these blocks, of course, are used.



Much Useful Shop Equipment Exhibited at Recent Detroit Show

Time and Labor Saving Tools in Evidence Showing no Doubt of Influence of Flat Rate

Yankee Ratchet Brace

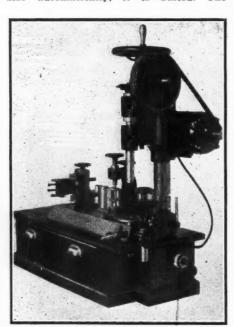
A NEW model "Yankee" ratchet brace has been added to the line of "Yankee" tools. A special feature of the new brace is the dust and moisture proof ratchet case and chuck. The latter being entirely self centering and capable of holding any type of bit from the smallest size up to % inch on the larger model. The handles, which are of hard rubber, will not warp or bind while the patented sweep handle eliminates excessive play. Made by North Bros. Mfg. Co., Philadelphia, Pa. Prices are \$7.75 to \$8.50.

Au-To Portable Compressor

One new model portable compressor has been added to line of The Au-To Compressor Co.'s., Wilmington, O. It is similar in practically all respects to the four models which have been carried for a number of years, only it is smaller and lower in price.

Council Cylinder Hone

Adaptable for bores ranging from 2 18 to 48 inches in diameter, the Council" cylinder hone is self centering and automatically expands when in use. It is made by the Auto Mechanics Council, 116 17th street, Moline, Ill. A special locking feature of the hone is that after the first bore has been ground to fit the piston the hone can be positively locked, insuring all other bores being the same size automatically, it is stated. The



Council Cylinder Hone

stones have a cutting surface of 13 square inches and are 18 inch wide. Nine stones are supplied with each hone, enabling 150 bores to be honed. The cost of new stones is 75c each. The price of the hone is \$75.

The working parts of the "Council" hones are enclosed in an aluminum body protecting the mechanism from grit. Any

N the following pages Motor Age presents some of the newer things shown to the visitors at the National Automotive Maintenance Show held in Detroit May 20 to 23. Additional equipment exhibited for the first time by manufacturers will be described in next week's issue of Motor Age.

standard make % inch portable electric drill may be used.

Vichek Tool Display Board

A display board showing an assortment of 39 mechanics' tools is now on the market. It is the product of The Vlchek Tool Company, Cleveland, Ohio. Included with the board is a cabinet for replenishing the display of tools that are taken from the board. Altogether 117 tools are included in the set, which sells at \$39 complete.

Shoemaker Bearing Machine

A number of useful features have been incorporated in the Shoemaker bearing machine made by The Shoemaker Automotve Equipment Co., Freeport, Ill., which has been designed particularly for rebabbitting connecting rods, it being possible to bore the bearings 20 minutes after pouring without removing rod from machine. The rod is held in position by its own pin in "U" blocks and also at the center, giving a three point hold. The bottom casting flange dies are centered with the pouring mandral and cannot move while the babbitt is being poured. After the babbitt has cooled the mandral is ejected from the top and the boring bar, which is carried on an adjustable vertical pillar is swung into position up against a predetermined stop, which allows the hand fed tools to make the nec-

The motor which drives the boring bar is ½ h. p. and is mounted on the same casting as that which carries the bar.

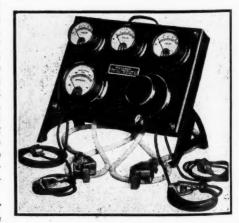
Every fitting necessary is supplied to pour and bore bearings in rods having up to 18 inch center to center length. The price is \$235.

Mayhew Solid Joint Pliers

Consisting of two parts only, a line of "Mayhew" solid joint pliars, cutters and offset pliars have been introduced by the Parsons-Cady Co., 9 South Clinton street, Chicago, Ill. On account of their construction, the jaws have a holding capacity of that of the regular slip joint pliars, but are able to hold the required articles with a greater degree of firmness and security. Price 50c to \$1.

Marshall No. 3 Battery Tester

The Marshall No. 3 battery tester is designed so as to show the individual cell readings of the battery at the same time while the battery is under discharge. The instrument board, which carries 3 volumeters and a rheostat, is mounted at an angle of 60 degrees, and as it has no protruding parts and weighs but 18 pounds it is easy to carry and can be used either in the shop or on the battery installed in a car. A provision is made on the No. 3 tester to determine the exact amount of current being used for starting, which requires the turning of a small thumb screw located directly beneath the rheostat handle. By inserting the thumb screw in the hole, the rheostat is shorted out of the circuit and the tester can then be readily fastened into the starter circuit of the car. The current in the circuit will then be shown on the ammeter. Two main flexible leads of large copper cross section are cuniehed, these having a special acid proof asbestos covering and equipped with lead coated 100 ampere clips. The price is \$61.75 and it is made by the Marshall Electric Company, 3225 Locust Boulevard, St. Louis, Mo.



Marshall No. 3 Battery Tester

New Shop Equipment Exhibited at Detroit Show

Klein Service Trestle

The Klein service trestle, made by The Klein Structural Steel Co., Bellevue, Ohio, is built throughout of steel, having a track 15 inches wide to accommodate balloon tires and trucks with the floor of the runway constructed of cross angles with a 1½ inch opening between them. This type of construction prevents the accumulation of snow or ice on the track and eliminates all possibility of the automobile slipping in wet weather. Steps are furnished on each side and are removable. The price of the complete trestle, including incline, is \$95 and the weight 1750 pounds.

DeVilbiss Paint Spraying Equipment

Complete spray painting equipment for refinishing with either pyroxylin or lacquer enamel materials is now being marketed by The De Vilbiss Mfg. Co., Toledo, Ohio. The outfit consists of five major units comprising a spray gun, 2 gal. pressure feed tank, air transformer for cleaning the air, exhaust fan and compressor. Several outfits are made for different sizes of garages and the prices range from \$117.30 to \$422.25, according to the equipment already available.

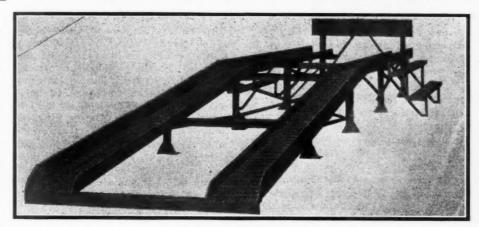
A small touch up gun with a glass container is also available for performing small jobs and can be operated off the small types of compressors usually available in garages. The price complete with four extra jars and length of hose is \$25.

U. S. Electric Screw Driver

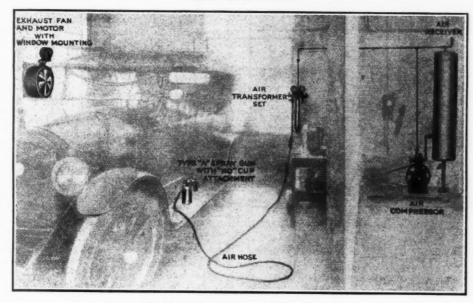
In addition to its complete line of portable electric drills, four models of electric screw drivers and nut setters similar in design and construction to the U.S. drills, are offered to the market by the United States Electric Tool Company, Cincinnati, Ohio. Prices range from \$48 to \$105. A positive clutch held "open" in normal position is engaged by pressure on the tool and is released when the pressure is removed. The screwdriver bits are held in place by a spring pressed ball and are equipped with a "slot finder." The machines can be operated on either 110 or 220 volts and either A. C. or D. C. current. Ten feet of rubber covered cable and an attachment plug are supplied with each of the four sizes.

Walker Bus Jack

A special jack for bus work has been produced by the Walker Mfg. Co., Racine, Wis. The new model is so constructed that it is possible to accurately place the jack under the bus, although the body overhang may be as great as six feet. The height of this model in its lowest position is 10 inches. The jack costs \$125.



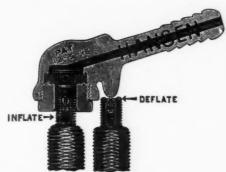
Klein Service Trestle



DeVilbiss Paint Spraying Equipment

Hansen Air Valve

Made throughout of metal and designed for tire inflation purposes, the automatic air valve made by The Hansen Mfg. Co., 1786 E. 27th Street, Cleveland, Ohio, especially is adapted for use in connection with balloon tires. A special new feature is a deflating point which is built integral with the valve. All valves are tested under heavy pressure while immersed in water and are guaranteed air tight .They are made with ¼ and ¾ inch solid stems. Price \$1.25.



Hansen Air Valve

K-D Gas Soldering Iron

In addition to its line of parallel jaw valve lifters, a new type of blue flame gas soldering iron operating on city gas and without using an air injection, has been introduced by the K-D Mfg. Company, 510 N. Plum Street, Lancaster, Pa. With this type of construction constant heat can be applied in any desired quantity and prevents oxidization of the tinning of the end of the iron. It is constructed in four different sizes and in both straight and horizontal types in relation to the handle.

Tripp-Secord Service Tools

A number of universal tools designed to fit practicaly all makes of cars, have just been put on the market by Tripp-Secord Company, Kerr Bldg., Detroit, Mich. Special attention has been paid to the construction of the bushing, sleeve and wheel pullers which form the backbone of their lines. The products which are marketed under the name of "Universal," will shortly be supplied to jobbers throughout the country.

New Shop Equipment Exhibited at Detroit Show

Sioux Valve Seat Reamer Set

A new "Sioux" valve seat reamer set comprising 13 pieces and carried in a substantial metal case has been added by Albertson & Co., Inc., Sioux City, Iowa. The newcomer sells at \$40 complete and is capable of servicing practically every make of engine. To take care of valve refacing in the tractor and industrial engine field an improvement has been made over the No. 650 valve face grinding machine so as to permit the finishing of extra large sizes of valves. The New No. 660 model, which lists at \$250, has an adjustable grinding head and a 13-16 inch special chuck.



Sioux Valve Seat Reamer Set

Blackhawk Cabinet of Socket Wrenches

A new cabinet containing a complete set of socket and ratchet wrenches capable of serving 99 per cent of all cars, is now being marketed at \$149.10 by the American Grinder Mfg. Co., Milwaukee, Wis. The individual sockets are carried in four drawers beneath the cabinet and located according to size. Another set of large extra heavy socket wrenches is also introduced to specially fulfill a demand that exists in the truck and tractor fields for large size socket wrenches. The sizes range from 1½ inch to 2% and are used in connection with a 24 inch detachable bar.



Blackhawk Cabinet of Socket Wrenches

Besco Electric Devices

The Battery Equipment and Supply Co., 1604 South Wabash Avenue, Chicago, Ill., has several new lines to supplement its range of battery equipment. Among them is an electrically heated ladle for melting and pouring compound, having a wooden handle, with the ladle itself made of cast aluminum. It sells for \$9.50, including cord and plug.

A battery carrier selling for 20 cents and made entirely of metal is also new, while a carboy ac'd emptying pump made of antimony lead and capable of standing rough usage has been added at \$9.75.

Kane Auto Cleaning Outfit

The Kane auto cleaning outfit, made by Wm. Kane Mfg. Co., 1903 East Hagert Street, Philadelphia, Pa., combines high pressure steam and a cleaning solution to remove mud, grit, tar and dirt from under bodies, chassis and motors of automobiles, greatly facilitating thereby the overhaul operations.

The outfit comprises a gas fired boiler, a thirty gallon solution tank, a Crane direct return tilting trap, twenty feet of steam hose and an equal amount of welding hose to carry the steam and solution mixture to the sprayer or gun. Automatic valves both for the gas, water and steam render the outfit almost fool-proof. Price is \$475.

New Danielson Machines

Three new machines, while designed for Ford and Fordson engines, but which can be adapted to other makes of engines, have been added by Frank Danielson Mfg. Co., 2344 West Austin Avenue, Chicago, Ill. A babbitting fixture selling at \$95 enabling babbitt to be poured at a lower temperature than is usual custom, a main bearing boring machine used in conjunction with the babbitting fixture, listing at \$850, and a cylinder reaming machine complete with electric motor at \$875 comprise the backbone of the line.

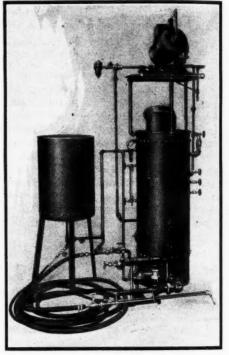
The reaming machine is designed so that the spindle is always in perfect alignment, while the use of an auxiliary rack eliminates the necessity of having a head carry the spindle up and down. A Ford block can be reamed in 30 minutes, it is claimed.

Weldit Gasaver

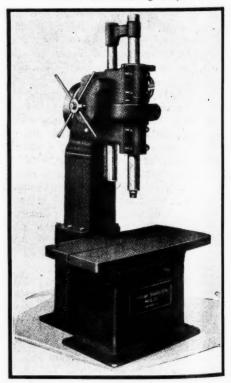
Designed to reduce the consumption of acetylene and oxygen, the Weldit Gasaver has just been placed on the market. It is made by the Weldit Acetylene Co., Detroit, Mich. At the beginning of the day the operator adjusts the correct flame on the torch and when new work is being set, jigs turned or welding wire secured, the torch is hung on the horizontal arm projecting from the apparatus. The arm when carrying the torch automatically stops the flow of the oxygen and acetylene. Upon lifting the torch from the arm and passing it over a covenient pilot light maintained constantly at the top of



Besco Ladle



Kane Auto Cleaning Outfit



Danielson Cylinder Reaming Machine

The READERS' CLEARING HOUSE Questions and Answers on Dealers' Problems BUILDING A ELECTRICAL A FLAT RATES SHOP A LEGAL A PAINT & TRIM A ACCOUNTING

Oil Ring and Pressure Feed to Wrist Pin

Q.—I am a constant reader of Motor Age and have found many helpful items therein. I have seen very little about the cars of my hobby (Lancia). I am overhauling one of these and would like to change the wiring from the old style double to the single wire system. I would like to the street was the system of the system. like to use the same switch button and rod mounted in the center of the steering wheel. Will you kindly give me some information of a practical way to accomplish this simply?—Howard Morgan, Hillburn, N. Y.

We do not happen to have a wiring diagram of the Lancia car. In a double wire system, however, you will usually find that a wire from one of the battery terminals, say the negative terminal, goes to one side of every unit on the car. For example, negative battery will be connected to one of the tail light terminals, to one terminal of each headlight, to one side of the horn, to one generator terminal, etc.

Then the positive connection from battery is carried to the other terminal of tail lamp, head lamps, generator, etc., by means of switches or a cutout. When a system of this sort is changed over to a single wire system it merely means that the frame of the car takes the place of the common connection formerly made by a piece of wire.

Study Present Wiring

Therefore if you will study the present wiring you will probably be able to make the necessary change over. If not you can copy the wiring diagram of practically any average car, taking the Ford for example. You would then ground one terminal of every unit, such as the lamps, generator and horn. You would also ground one terminal of the battery and would then run a connection from the other battery terminal through the necessary fuse boxes, switches and junction boxes to the various units. You refer to a switch button and rod mounted in the center of the steering wheel. We assume this is used to operate the horn, and on one-wire systems a device of this sort usually completes the circuit by making a connection to the ground.

Q.-We intend to install a special type of oil scraping ring on the pistons and intend to place these in the ring groove above the wrist pin, owing to the fact that the wrist pin is pressure lubricated, and we wish to keep as much oil as posfrom going into the combustion chamber.

This procedure would undoubtedly keep oil from the combustion chamber, but we question whether it would be advisable or not. The oil scraping type of ring is so designed as to feed oil through the small holes in the bottom of the ring groove and let it go back into the crankcase again. This also means, of Present Fuel Not Good in course, that a ring of this type is not quite so good for holding compression,

Motor Age Readers' Clearing House Index for May Issues

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Old Engines

Q.—I have a Hudson 33 touring car which I have driven for seven years. This old car runs well and is economical with gas, getting from 23 to 25 miles per galgas, getting from 23 to 25 miles per gallon, always starting easily but it never did pull as well in high as I would like, except it be going at a speed of 25 miles per hour or more. While on the farm I used it for everything, even mowers and harrows, and it always gave good power while working in low and second. Why will it not pick up good in high?—Guyer's Garage, Kress, Texas.

We are under the impression that among other things the installation of a hot spot in the inlet manifold will greatly improve the pick up of the car. The manifold itself was designed for fuel much more volatile than is securable today, and if you will make the change mentioned it will improve the carburetion and consequently improve the pick up in high.

Considering the age of the car, it probably will be advisable to recondition the cylinder bores, install new piston rings and give it a general overhaul.

Q .- The main bearings seem to be loose and I am thinking of working on it. What I would like to know is, how is the best way to start to work on this old style car? Do we have to remove the body first? This car was made in 1910 and l have not had to do any work on it or on one like it, so would thank you for any suggestions you could give on this job.

Adjust Main Bearings

If the work is to be done on the engine exclusively, it will not be necessary to remove the body. The looseness of the main bearings, if they are not worn badly, can be eliminated by adjusting them. We would recommend, however, that you remove the engine assembly. dismantle it thoroughly and test the main and connecting rod bearings for contact with Prussian blue and then adjust them to the proper degree of tightness, or install new ones if necessary. The procedure on making the repairs is no different than on the ordinary engine, as the design of the car throughout is conventional. Above all, we would recommend the installation of a hot spot. and, if possible, a new carburetor.

If you are not certain as to the what ought to be done to the main and connecting rod bearings, better consult a competent mechanic. Even that is not sufficient at times. The chances are ten to one that the bearings and crankshaft in your engine are worn and this calls for the installation of new bearings and putting the carnkshaft ni condition. New bearings alone are of no avail if the shaft is not true and properly conditoned for the bearings. This is only work which can be done with proper equip-

Planning Your New Building

By TOM WILDER



A Well Planned Automotive Dealer Establishment

Q.—From time to time we notice suggestions for plans of garage buildings and showrooms in Motor Age and will be pleased to have you make a sketch for us, as we are contemplating building in the near future.

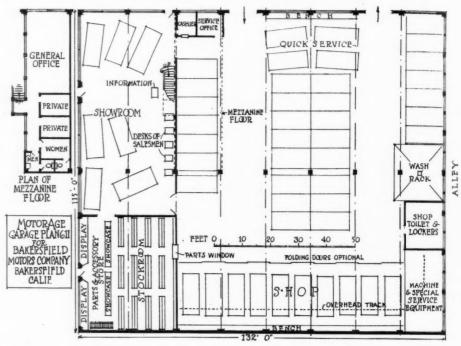
Our lot is 115 by 132 feet on the northeast corner of two wide paved streets. On the north is a 20 foot paved alley. We want a showroom for Studebaker cars approximately 70 by 35 feet, with offices on a mezzanine floor back of the showroom. We want the shop large enough to contain 10 cars at a time, and the plans otherwise to take care of a general garage, all on one floor.—Bakersfield Motors Co., Bakersfield, Calif.

We believe that this plan very nearly fulfills the conditions laid down in your letter and we think it has worked out unusually well. Usually our clients want about twice as much storage space, twice as much shop capacity, stockroom capacity, and showroom capacity, as there is space for, but in this plan, if anything, there is more than you asked for. The accessory department and stockroom is unusually large and there is storage space for a good number of cars. There is a handy space for quick service close to the entrance while service of a more serious nature can be taken to the shop. We have shown a series of folding doors enclosing the shop proper and separating it from the storage garage, but these of course are optional. The shop would be more easily entered and left without them, but on the other hand it would be more open and public and it seems to be a matter of personal opinion whether these enclosures are good or bad. If the stockroom seems too large another car space might be added to the shop at its expense.

Mezzanine Office Floor Space Over Storage

The mezzanine office floor is extended over the car storage space in the garage, so that it in no way interferes with anything else. The three trusses over this southwest corner of the building could be higher than the balance, in order to give car space below and head room above this mezzanine floor.

Inasmuch as your heating problems are probably not serious, it might be as well to make the whole roof as high as this section. The garage would be much more airy as a result and if this were done and more office space desired it could be extended over the stockroom. Also the hot weather of the summer months would not have so much effect on the interior temperature if the roof were higher.



The offices are on a mezzanine floor or, a balcony over the front row of cars

LEGAL QUESTIONS ANSWERED

By WELLINGTON GUSTIN

of the Chicago Bar

COURT APPEAL OPEN

Q. There is considerable agitation at present by the Bureau of Maintenance of the Department of Public Works and Buildings in regard to gasoline curb pumps. Their instructions and blue prints specify that such pumps must be placed at least 13 feet from state right of way line, or 43 feet from center of pavement. This is an expensive proposition and it is impossible to comply with requirement which would require a frontage of not less than 164 feet. Can you give us the law on this matter? Meridian Service Station, Patoka III

This is a rule or regulation laid down by the department in the administration of the law relative to its creation. I find no specific statute covering location of gasoline curb pumps. So a regulation laid down must be complied with the same as a positive law, except or unless such regulation is arbitrary and unreasonable. If the regulation is reasonable and within the duties and powers of the department then it must be obeyed. However, if you feel that the application of the regulation to you or your business is not in keeping or in accordance with a proper administration of the regulation or that the regulation itself is arbitrary and unreasonable, then you may appeal to the courts to enjoin the execution of

any orders issued against you by the Bureau.

LIEN VS. CONTRACT

Q. Is there a contract form that we could use in Indiana to insure collection of repairs, tires, gasoline and oil? We have a lien law here but we would prefer a contract so we could get away from open accounts. If there is anything that we can use, please send us a copy.—Mitchell Auto Co., Bridgeton, Indiana.

I know of no such published form of contract as you desire. However, you could have your local attorney draw up such a form fitting your particular needs. Such a contract would be of especial value as against your customer. But such contract might not protect you so well as asserting your lien for repairs, etc., should it happen that third parties claimed liens or priorities on the chattels involved.

500,000 FORDSON TRACTORS BUILT

RIVER ROUGE, La., May 30.—The Ford Motor Co. reached the half million mark in the production of Fordson tractors recently, when Fordson No. 500,000 came off the assembly line at the River Rouge plant. It is planned to exhibit the tractor at the state fairs during the coming summer and fall.

Motor Age's Flat Rate Forum

EDITED BY B. M. IKERT

Time-Saving All Important Factor in Using Flat Rate

THAT equipment and tool makers think of flat rate in the building of their product is well demonstrated by observing some of the things in connection with such equipment.

The matter of saving as much time as possible on a job is, of course, one of the first requisites in applying flat rate time schedules or fixed prices. Time-saving involves not only short cuts by the mechanics or adroit handling of tools and parts, but means that such tools can be made to actually save time by their design or finish.

For example, we all know that the shop which is well hooked up has a lot of equipment and hand tools which belong to it and not to the mechanics. Many mechanics prefer to use their own tools and in many shops, in fact, a mechanic must furnish his own tools. Nevertheless, there are things like wheel pullers, special wrenches, and other shop tools which are furnished by the shop. One maker of special service tools is prepared to finish these in any color desired, so that distinction can immediately be made as to which tools belong to the "house" and which belong to the mechanic.

Thus, when a mechanic finishes a job on which he has used several shop tools, he can, when through with the job, quickly sort these from their color, and return them to the tool room. Just another instance of saving a little time.

Flat Rate Charge a Success

After a trial of a year, the Gilbert Chevrolet Co., 2352 Gilbert Avenue, Cincinnati, reports that its flat rate charge, with twenty-four hour service, is an

unqualified success, both from the company's and the customers' standpoint.

The day-and-night service has been found especially valuable for those who use cars for business purposes, such as business concerns, physicians, salesmen. collectors and so forth, and all pronounce it a great convenience and time-saver. All cars received in the evening are delivered in first-class working order the following morning. The over-night repair of any Chevrolet is easily possible, it was explained, and there is no work on a Chevrolet that they cannot do in twelve to fourteen hours, with their large force and complete facilities.

People like the idea of being given in advance a flat rate for making the repairs. All appreciate this removal of the old-time bugaboo of leaving a car and not knowing what the repairs are going to cost, and perhaps finding the bill larger than they thought it would be. And there are no kicks and complaints from customers who think that their bill should be less and who feel that they are being over-charged. All know what the bill will be, and there is no ground for complaint when it is received. removes all of the horrible agony of waiting to see what the cost will be," said one customer, and this is found to be the way most automobile users look at it.

The idea of naming in advance a flat rate to the customer for making repairs came through the company's salesmen, who expressed the opinion that it would be of great assistance in lessening the sales resistance. They were so insistent that the uncertainty of the cost of upkeep was keeping many prospects from buying that the plan was tentatively



THINGS WHICH HELP FLAT RATE Cleanliness and orderliness—these have been spoken about many times in connection with making maintenance pay, but they still hold good. Being able to do a certain job within a specified time means usually that the job will pay a profit and one of the surest ways to make this possible is to keep the benches and floor clean

adopted. The salesmen were right, as has been demonstrated by a try-out of a year, and now the plan is a permanent feature.

"The combined result of the two plans, a flat rate with twenty-four hour service, has been a financial success from the standpoints of sales and service," it was stated. "More than that, it has kept every customer satisfied. All of our customers are happy, we know, for they do not hesitate to tell us that they are. They are contented, and they are enthusiastic 'boosters.' And this, of course, means sales to their friends and it also means ultimate re-sales to them."

Good Luck With Flat Rate

North Chicago, Ill.

To the Editor of MOTOR AGE:

We would like to have another copy of the April 30 issue of Motor Age as my copy was stolen a couple of hours after I received it, and I certainly do want the flat rate chart published in that issue. We have used your flat rate system now for a year and sure are having good luck with it, no kicks as to prices on labor as it was before.—World Garage.

MOTOR AGE'S FLAT RATE FORUM

No. 15

BUICK FLAT RATES FOR FRONT SPRING OPERATIONS

Man	ufacturer's .	Labor
Offic	cial	Charge
Desi	ignation	Operation
1	Bracket—Rebush one. Block up frame, remove rear shackle and rebush one front spring bracket	\$3.10
2	Bracket-Tighten. (Done with frame operation JI-3.)	
3	Bumper—Install one new rubber bumper	1.20
4	Bolt Shackle-Install new one. Old bolt not broken	
5	Bolt Shackle-Install each additional bolt. (State how many)	.45
6	Bolt Shackle-Install one new when old is broken	1.45
7	Bolt Shackle—Tighten all—front and rear	1.20
	Tighten front only	
8	Bolt Center-Install new one, remove spring clips and install new	
9	Clips—Tighten front	.60
10	Clips—Tighten all—front and rear	.90
11	Clips—Tighten all—front and rear	
12	Front Spring—Install one new	3.10
13	Front Spring-Rebush one, remove, rebush and reinstall one for	
	spring	4.50
14	Front Spring—Rebush both	7 50



Clearing Up Electrical Troubles

EDITED BY A. H. PACKER

Some Diagrams and a Manual Wanted

Q.—I wish to have wiring diagram of 1923 or 1924 Daniels roadster and also wiring diagram of the Miller Special seven passenger touring car, built on the Pacific coast.—James R. Frole, 113 Rebecca avenue, N. Braddock, Penn.

This information was published on page 33 of the July 31, 1924, issue of MOTOR AGE and we are sending you this page by letter.

Q.—Would like to know where we can get a wiring diagram book showing circuit of all cars from 1918 up to and including 1925.

This information will be given by letter.

Q.—Would like a wiring diagram of the 1921 Stephens.

This diagram is published in accordance with your request.

Tries to Charge 12-V. Battery With 6-V. Generator

Q.—I have been charging some batteries with a Ford generator with belt from line shaft. Let me know what was wrong when I attempted to charge a Dodge Brothers 12-volt battery. The battery would reverse the generator and was discharging back through the generator, although I had the wires hooked up to the positive side of the battery the same as I had been charging the 6-volt batteries.

The Dodge Brothers battery when taken from the car had the positive side grounded. I always supposed a battery had to be charged either on or off the car from the positive side. Please explain this to me and advise if it is possible to charge a 12-volt battery with a 6-volt generator.—G. J. Blancett, Janesville, Lassen County, California.

A 12-volt battery should not be charged with a 6-volt generator, due to the fact that the generator will overheat and the field winding and armature burn up. This is due to the fact that the 12-volt battery maintains 12 volts at the generator, so that the field circuit gets about twice the normal current. As the heating is proportionate to the square of the current we have four times the normal heat produced in the field winding.

This heat surrounding the armature will loosen the soldered connections and the wires will fly out from the commutator. You should, however, have no trouble in getting the 6-volt generator to charge a 12-volt battery, and operation would be all right for perhaps five or ten minutes until the generator began to get hot. The terminal of the battery which was grounded on the car has nothing to do with the problem of charging. It is possible, however, that when you connected the battery to the generator that you did not have positive battery connected to positive generator terminal. Your statement about charging from the positive side did not mean much, as two connections are always necessary. On the Ford generator the terminal may be ALSISTANCE UNIT CONTINUE CONTINUE AND ICHTION SWITCH

STANTING SPOTCH

Wiring diagram of 1921 Stephens

positive and the frame negative or the terminal may be negative and the frame positive. This polarity can be changed by merely connecting the battery to the generator and battery current will for an instant flow through the field winding and magnetize it in the right way. If the belt is off of your generator the 12volt or 6-volt battery should make the generator run as a motor. Then when the belt is put on and the generator driven in the same direction that it motors, only at higher speed, you should find that the generator would charge the battery. In any case, when you are charging a battery on the bench it is safe to close the cutout points by hand if you are using a cutout, or otherwise run the generator as a motor for an instant to make sure that it is magnetized the right way. The precaution to take when putting the battery back on the car is to turn on the lights and see that the ammeter shows discharge. If it shows charge it shows you have reversed the battery and grounded the wrong terminal.

REVISED BOOK ON STARTING AND LIGHTING

The Norman W. Henley Publishing Co. of New York City announces a 1925 revised and enlarged edition of "Automobile Starting, Lighting and Ignition Systems," by Victor W. Page. This book sells for \$3. Fundamental electrical principles are first covered, together with the elementary technical on which magnetos, generators, starters and battery ignition systems are built. A number of chapters are devoted to descriptions of the electrical equipment on cars such as Ford, Maxwell, Hudson, Dodge, Stutz. Mitchell and Roamer. A chapter is devoted to electrical measuring instruments and use in testing, this chapter also containing information on various tests to locate short circuits and ground in armatures and open circuits in armatures and field windings. The book comprises 892 pages, approximately 200 pages being devoted to wiring diagrams of the electrical systems of various cars.

EDITORIAL

Inspiration and Guidance

A SUBSCRIBER wrote to one of our publications a little while ago.

He started in business from reading the publication and he still regards it as his principal source of practical knowledge and inspiration.

With this particular subscriber the publication he uses is his authority, just as he, the subscriber, is the authority for his customers.

The publication influenced him and in turn he influences his customers.

Influence always flows from those who know to those who do not know-not the other way about.

Reaching the trade through the trade press is reaching the user through his authority.

The Race

THE International 500-mile race at Indianapolis is an automobile classic. More persons are said to pay admission to see it every year than any other sporting event in America. The Kentucky Derby falls far short of it in attendance.

For five blistering hours the fastest automobiles that men can make within the size and weight limitations scorch the very bricks that pave the roadway. And men of grim determination, skilful hand and foot and steady eye sit at the wheel and battle for supremacy. Some are able to endure to the end; others fail before their mechanical mounts. But given the machine and the man who can stay and we have a performance that inspires.

The racing cars of today are immeasurably better than the racing cars of a decade ago. Likewise the passenger automobiles of today are incomparably superior to the product that was put forth for general use some 10 years ago and the progress of both is inseparably tied up with severe testing of new design and equipment provided by this race. From the race of last Saturday lessons have been learned that will make better the cars of tomorrow.

We Want Wide Roads

H IGHWAY building time is here. In many states machines and men are at work laying mile after mile of permanent pavement. The durability and utility of these pavements will depend a great deal on how wide they are.

For most state highways the standard width of 18 feet for the pavement seems to have been adopted. That is wide enough for the long stretches miles from cities, but very much too narrow for the gateways leading into the populous centers. In the vicinity of all important cities the pavements should be at least double this width. And out in the country where the 18-foot pavements prevail the shoulders on both sides should be kept up in well graded and graveled condition for the width of one vehicle track. This would provide a safe lane of traffic for the horse drawn vehicles that are still found in considerable number, and at the same time would facilitate passing by motor vehicles.

Our national road program is developing slowly, in spite of the fact that many thousands of miles of permanent highways are built every year. The motor vehicle is completely revolutionizing highway transport, and yet we are building roads just as we built them for horse drawn traffic with the exception that more of the present day highways are hard surfaced. Same width, same sharp turns, same grade crossings, same tortuous way through congested towns and cities. But some day, if the motor vehicle industry asserts itself as it must for its continued welfare, we will have broad highways skirting the edges of towns and cities and connecting with city streets, making the turns in graceful, well balanced curves, and passing under or over all railway tracks.

Opera Singing and Salesmanship

To attain success in grand opera a noted critic says there are four fundamental requirements—intelligence, health, hard work and voice. He puts voice last, for without the other three essentials even a good natural voice is not a great asset. In the case of the automobile salesman the fundamental requirements are the same, except that the requirements of "voice" would be substituted with what we would call "native sales ability." A salesman might have "native sales ability," but he can't get far without intelligence, health and hard work.

Why and How

ACHINERY in operation has a peculiar fascination for most men. This attraction is especially strong for men engaged in the automobile business, for almost without exception these men are more than usually interested in the marvelous performance of mechanical contrivances which have been evolved to eliminate or lighten physical labor. This in part explains the interest in the maintenance equipment show and service convention at Detroit in May. This interest was further accentuated by the emphasis on HOW by speakers on the service convention program. The talks for the most part were practical expositions of HOW this or that operation or plan is carried out. A good many WHYS were discussed but always they were coupled with HOW.

Industry Looks for Keener Competition

Signs Show Manufacturers Proceed to Meet Situation

Second Quarter Earnings Will Be Large—New Models Are Along Lines of Refinements

NEW YORK, June 4.—Signs multiply that car producers are preparing in an orderly way for keener competitive conditions that are looked for in the next few months. New models are announced by several factories, and there are a few cuts in prices. Although the period when sales stimulants are seriously needed has not yet arrived, there is a feeling in many quarters that early preparations for the slower season are of strategic importance.

The new models emphasize the fact that current changes are in the line of refinements rather than representing radically new designs of chassis or bodies. In this as well as in other respects the industry is in a more stable condition than ever before, and therefore better able to go through the year without serious losses through overproduction or the necessity of making major changes in factory equipment.

Outlook Good

The outlook is that earnings statements for the second quarter of the year will be the best that many companies have shown for a long period. The same situation is reflected in the resumption of dividends by companies that had made no payments for a year or more, and in retirements of notes and other prior obligations against stock earnings.

These evidences of prosperity are the more remarkable in view of the fact that reduction for the first five months of 1925 was no greater than for the corresponding period last year. The reason is that during the last months of 1924 and the early months of 1925 production was kept down to the minimum of demand from dealers, so that there was no need for costly liquidation and other losses that accompany over-production.

Mason Truck Co. Absorbed By Flint Motors Company

NEW YORK, May 30.—The Mason Truck Co., hitherto conducted as a separate unit by Durant Motors, Inc., at Flint, Mich., has been taken over by the Flint Motor Co., and will be operated as a truck division of the Flint factory. The Mason factory will be sold.

Several major personnel changes have also been made at Flint. W. R. Willett has been appointed vice president and general manager, succeeding W. E. Holler, who resigned recently. Mr. Willett has been vice president and general manager of Durant Motors of Indiana. W. O. Crabtree, formerly with the Franklin

sales organization, has been named sales manager, succeeding Frank Witt, who also resigned in April.

The trucks and buses to be manufactured at the Flint plant will bear the name of Flint Road King. The complete line will be announced shortly. A feature will be a new popular-priced three-quarter ton model.

"The changes at Flint," says C. F. Daly, vice president of Durant Motors, Inc., "have been made in line with the policy adopted by Durant Motors of concentrating activities wherever possible in the interest of economy."

Mr. Daly denied a rumor that the Locomobile operations would be transferred to Flint and the Bridgeport factory used for building engines. He said that Flint production is limited only by the difficulty in obtaining bodies and that orders for the Locomobile Junior Eight are sufficient to cover two months' production. Deliveries will start June 1.

Indianapolis S. A. E. Dinner Attracts Notable Gathering

INDIANAPOLIS, May 30.—That an airplane speed record equalling or exceeding 300 miles an hour will materialize within a comparatively short time was promised by Major General Mason M. Patrick, Chief of Air Service, United States Army, in an address in Indianapolis last night.

General Patrick was one of the feature speakers of the pre-race welcoming, Silver Anniversary Dinner of the Indiana Section, Society of Automotive Engineers and the Indianapolis Chamber of Commerce. It was a notable event, commemorating the birth of the automotive industry and gathering together S. A. E. members and business leaders from many parts of the nation.

Some 600 persons were at the tables, F. E. Moskovics, president of the Stutz Motor Car Company, acting as toastmaster, George Briggs, general manager of the Wheeler-Schebler Manufacturing Company, was chairman of the evening.

The air speed record immediately after the war, said Major General Patrick, was 120 miles an hour, going up to 266 miles an hour in five years. Just now the record is held in France but if France expects to retain the honor of fastest flying time, General Patrick declared, she will shortly have to beat 300. In other words, as drawn from his remarks, the United States Army's flyers are just about "set" to travel at the above indicated rate of speed.

C. F. Kettering, president of General Motors Research Corp., C. M. Schwab and former Senator Albert J. Beveridge were the other speakers. William Herschell, poet, gave a reading with an airplane flavor.

May Production Will Be Less Than Output for April

Number of Sundays and Holidays Cuts Activity—June Operation Not to Slacken

DETROIT, June 2.—Preliminary figures on May shipments from factories indicate that the total for the month will be slightly under the record breaking April total but well over the 400,000 mark. The falling off in totals as between the two months is due principally to the number of Sundays in May and the one holiday. The rate of car manufacturing and shipping has not slackened and with normal working days May would have set a new all time record.

Throughout the month the manufacturing pace has been steady, the latter part being as productive as the first half, and the industry will go into June at fully as active operation as during May. If there is to be a falling off it will come in the last half of the month. Manufacturers, however, are looking for a continuing strong business through the month, with slower but steady business during July and August.

May manufacturing was not marked by any increases or decreases by individual companies, the entire industry as a whole maintaining about the same relative positions as during April. Most companies were at capacity during the month and will finish the month with many unfilled orders carried over. Dealer stocks likewise are reported low giving assurance to factory executives that June production will approximate capacity totals.

ESSEX PRICES REDUCED

DETROIT, June 1.—Price reductions announced today on the two Essex models make the coach and touring car now list at \$850. The coach formerly listed at \$895 and the touring car at \$900. These reductions, following those made on the Hudson models a month ago, stabilize the Hudson-Essex line on the basis of the new production schedules made possible by increased factory capacity. The company reports orders far ahead of factory output.

MOON REVISES PRICES

ST. LOUIS, May 30.—The Moon Motor Car Company has announced a change in prices of its Series A open models. The roadster, which formerly listed at \$1259, now sells for \$1395, and the 5 pasenger touring car, which formerly listed at \$1195, now lists at \$1295.

SETS "24 HOUR" DRIVING RECORD

PARIS, May 23—(By Mail)—Driving a single seater standard sports type English A. C. car, Thomas Gillett set up new records for twenty-four hours and for two thousand miles, recently, on Monthlery track, near this city.

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Dr. Melvin T. Copeland to Address A. E. A. Meeting

Plans Are Completed for Summer Convention-Program Most Valuable Yet Given

CHICAGO, May 30.-Dr. Melvin T. Copeland, director of the Bureau of Business Research of Harvard University and one of the leading merchandising authorities in the country has been secured to address the spring meeting of the Automotive Equipment Association on "The Cost of Doing Business." The meeting will be held at Colorado Springs, Colo., June 22-27.

In his address Dr. Copeland, who will be the only outside speaker, will make comparisons between the 1924 and 1925 reports and also between the automotive and other industries. Questions also will be answered on any subjects. At this session, the first announcement relative to the operating expense survey will be made. Printed copies will be distributed at that time.

Meetings Announced

All meetings will take place in the theater of the Broadmoor hotel, starting at 10 a. m. If necessary a session will be held Saturday, otherwise the meeting will be adjourned Friday, June 26.

Jobbers divisional meeting will be held in the practice room of the golf club, Wednesday, June 24. The manufacturers division will hold an executive session in the Broadmoor theater Wednesday morning.

The board of directors and committee meetings will be held in the Broadmoor hotel as follows:

Board of Directors, Golf Club parlors, Monday June 22.

Monday June 22.

Membership, golf club smoking room, June 22, H. J. Banta, chairman.

Standardization, Indian Grill, June 22, G. B. Shearer, chairman.

Lamp, practice room golf club, June 22, W. E. Wissler, chairman.

Vigilance, Colonial Club parlors, June 22, D. S. Brisbin, chairman.

Good Road and Highways, Colonial Club parlors, afternoon June 22, L. S. Upson, chairman.

Replacement Parts, afternoom, practice.

Replacement Parts, afternoon practice room golf club, June 22, M. McCormick, chairman.

Catalogue, Indian Grill, afternoon, June , Wm. Von Elm, chairman.

22, Wm. Von Elm, chairman.

Labor, ballroom, June 22, A. M. McKinnon, vice-chairman.

Motor Car Contact, golf club parlors, afternoon, W. T. Morris, chairman.

Merchandising, Indian Grill, June 23, afternoon, L. A. Safford, chairman.

Foreign Trade, Colonial Club parlors, June 23, H. N. Oliver, chairman.

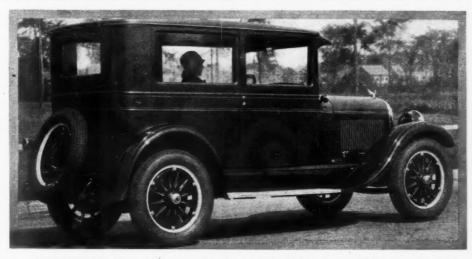
Railroad Classifications, golf club smoking room, June 23, A. S. Lenhart, chairman.

State Vice-Presidents, Little Theater, June 22, N. F. Ozburn, chairman.

REBABBITTING CONFERENCE HELD

WICHITA, Kan., May 30.—The Annual Conference of branch managers of the Watkins Rebabbitting Service was held at the main office here, May 27-28-29. This service is now established in twenty cities of the United States and plans are under construction for about ten additional plants during the coming year.

New Chrysler Coach



DETROIT, May 25.—A new coach priced at \$1,545 is announced by Chrysler Motor Corporation. The design follows the general principles of the well known Chrysler line of motor cars, and this new vehicle is particularly well equipped.

The body is built by Fisher and both body and wheel are blue with Duco finish. Upholstery is pastel blue and gray plush. The two doors are wide. There is ample seating capacity for five adults. Standard equipment includes one-piece V V windshield, automatic windshield wiper, rear vision mirror, dome lamp and transmission and door locks.

CERTIFIED CHECK WAS FORGED

Baton Rouge, La.

To the Editor of Motor Age:

We would like to request you to publish a warning to automobile dealers and garage owners against a party giving the name of D. Clyde Turk.

On April 16th this man purchased a car from us, giving in payment a check which proved to be worthless. He has left a trail of worthless certified checks. largely with garage owners, starting at El Paso, Texas, and going all the way up the Pacific Coast, through California, Oregon and Washington, and then doubling back through the west. He was last heard from in Wyoming. The checks which he passed in the west were drawn on a bank at Plaquemine, La. He seems to have a certified stamp and forges the name of one of the bank officials to the certification.

When last heard from this party was traveling in a model 25-26 Buick Standard Six Coupe, with frame No. 1330210 and motor No. 1356491. We are making this request of you as your magazine has quite a wide circulation among the trade. and this man seems to be confining his swindling operations very largely to garages, and we feel that they should be warned against him.

Yours very truly, Barnes Buick Company, W. P. Barnes, Jr., Manager.

SCHRADER PICKS LOS ANGELES NEW YORK CITY, May 30.—A.

Schrader's Sons, Inc., manufacturers of standard tire valves and tire gauges, will establish a Pacific Coast Branch in Los Angeles. John Hoerger, who has been connected with the organization for many years, has been appointed manager of the Los Angeles branch.

Ajax Display Production Averages 18 Cars Daily

RACINE, Wis., June 1.—The Ajax Motors Company during the first three weeks of actual production has been turning out an average of eighteen cars per day. No attempts will be made to speed up production while the manufacture of display cars is being carried out. As soon as the distributors throughout the country are supplied with models of the sedan and touring car for exhibition purposes, factory production schedules will be accelerated to supply the trade.

A schedule of one hundred cars per day is expected to be reached by September 1, according to David Averill, vice-president and general manager of the company. The plant capacity is 250 cars per day, and provisions can be made with the addition of machinery for turning out 300 per day.

ROLLIN WINS ECONOMY DRIVE

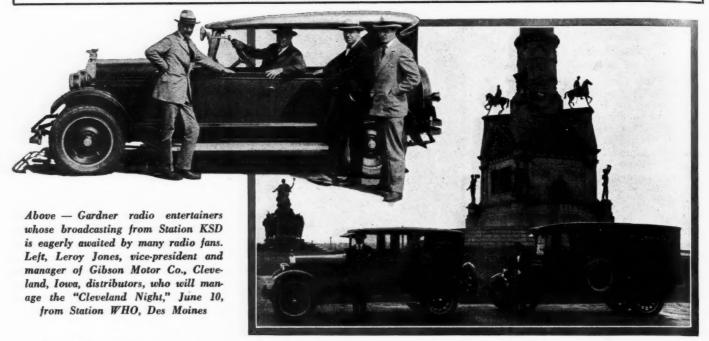
LOS ANGELES, May 28. - Official scores released today by J. A. C. Waters, run manager of the ninth annual economy run to Camp Curry, Yosemite, give the sweepstake honors to the Rollin, entered by Slaughter Motors, Inc., of Los Angeles, Southern California distributors.

The Oakland sedan, entered by Reeve Gartzman, Inc., of Los Angeles, Southern California distributors, was second. The Roamer driven by Harry Tarkington placed third. The drivers of all three placing cars are veterans of former economy runs.

TRUCK UNIT IS MOVED

DETROIT, May 30.—Dodge Brothers has moved its truck unit from the building formerly leased from Swedish Crucible Steel Co. to the Ordinance building,

Dealers Hear Gardner Radio-WHO to Feature Cleveland



ST. LOUIS, June 2.—Radio continues to assert itself in the automobile field. Many dealers and distributors, including Louis Geyler, Chicago, Kelly Automobile Company, Minneapolis, C. J. Siors, Pittsburgh, Harris Motor Company, Meadville, Pa., H. H. Barton, Dayton, O., and the Snyder Automobile Company, of Columbus, O., have installed receiving sets in their showrooms in order that visitors may listen in on the Monday night programs of Gardner Eight-in-Line entertainers. The Gardner entertainers broadcast from Station KSD, St. Louis, and their programs are eagerly awaited by many

radio fans.

A special radio program from WHO, the Bankers Life Station at Des Moines, has been arranged for the night of June 10 for Cleveland owners, dealers and prospects. This will be known officially as "Cleveland Six Night" the program to be sponsored by the Gibson Motor Co., Iowa distributors of Cleveland cars. Cleveland owners will provide the entertainment. LeRoy Jones, vice president and manager of the Iowa company, will be manager of the event. The program will begin at 6:30 and last until midnight.

New Dodge Brothers Factory at Toronto Begins Operations

TORONTO, Ont., May 30.—Displacing the factory established at Walkerville, Ont., Dodge Brothers have begun operations at their new Canadian plant, located here. The new factory has been designed to manufacture Dodge Brothers cars and Graham trucks, both for the Canadian and export markets.

The buildings acquired for the purpose are among the finest erected by the Imperial Government Munitions Board during the world war. The original cost was in the vicinity of \$1,250,000, and subsequent improvements represent a further investment of another half million. The entire property consists of twelve acres of ground, eight large permanent buildings, with a total floor area of 257,000 square feet.

It has been determined that the variety of processes entering into the manufacture of a completed motor car will be greatly increased over those carried out in the present Canadian plant when location is finally established in Toronto.

The Canadian business will be conducted by a subsidiary company—Dodge Brothers (Canada) Limited—incorporated under Dominion charter. It will govern its own product and formulate its own policies in harmony with those of

the parent organization, and with the requirements of the countries to be served. The board is essentially the same, with the necessary Canadian element added, as that of Dodge Brothers, Incorporated, Detroit. Mr. E. P. Clarkson, it is announced, has been appointed managing director.

Duller Wins Montlhery Race With Average Speed of 97.2

PARIS, May 19—(By Mail)—George Duller, professional jockey, won the 310 mile opening race of the season on Montlhery track, with a 91½ cubic inch Darracq at an average speed of 97.2 miles an hour. Count Conelli, driving a Darracq, turned over at the finish a few yards behind the winner. Major Segrave, Darracq, took third after setting up a track record at 106.1 miles an hour.

ESTABLISH BRANCH PLANT

LOS ANGELES, May 30.—The Delco-Light Company of Dayton, O., has established a factory branch in Los Angeles, at 1518 West Seventh Street. The decision to create the Southern California branch was made by R. D. Funkhouser, secretary of the company, after a personal analysis of the market. Ivan L. De Jongh, for many years Los Angeles distributor of Frigidaire and other Delco-Light products, is branch manager.

Slackening of Demand Hits Middle West Distributors

CHICAGO, June 1.—Uncertainty rules the automotive industry in Chicago and the surrounding territory. The slackening demand which has been reported in various parts of the country has struck certain dealers and distributors, with a result in the falling off of sales. A pronounced slump will not occur, in the opinion of most dealers, but the buying will again swing back into better channels with the help of continued good weather.

In the country districts, the conditions are spotty, and here it is found that only certain dealers are complaining. Those cars which have a pronounced tendency for yearly models are being hit the hardest, with the others enjoying a "reasonable business."

June is expected to be a good month and dealers of the various grades of cars are planning their sales campaign accordingly. The temporary slump the latter part of May will be offset during the next thirty days, should good weather hold forth.

Used cars are being traded in on a much stricter basis and accessory and parts dealers report their sales as being good. Tire sales are still up, despite the record buying before the price increase.

Hupp Disposes of Body Plant To Murray Body Corporation

Latter Organization has Five Year Contract to Manufacture All Body Styles

RACINE, Wis., May 30.-Murray Body Corporation will take over the body plant of Hupp Motor Car Corporation immediately under the terms of sale and will build all Hupp bodies. The terms of sale include a five year contract to manufacture bodies for the Hupp corporation, both open and closed, the Hupp company discontinuing the body trimming and finishing department at the factory and devoting this space to chassis manufacturing.

It is the plan of the Murray company to continue the building of Hupp bodies temporarily at Racine, gradually moving this to its large Detroit plants and supplanting the Hupp business at Racine with sales to companies in that terri-The Racine plant has capacity for sixty thousand passenger car bodies yearly. Under Murray operation a considerable part of this will be devoted to bus body manufacture.

Los Angeles Dealers Plan New Automotive Department

LOS ANGELES, May 30.—Local distributors and dealers, acting through the Los Angeles Motor Car Dealers Association, have received the privilege of laying out the automotive department in the new \$1,000,000 Frank Wiggins Public Vocational School here, in choosing equipment and selecting instructors.

With the automotive dealers interesting themselves to the extent of seeing that the training shops and the conduct of the courses are so equipped and organized, it is felt that a dependable source of shop labor will be created and maintained. It is the opinion of many dealers that in five years more than 50 per cent of all new salesmen will be graduates of recognized automotive schools, because mechanical knowledge will be manded."

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TO ESTABLISH BRANCH PLANT

LOS ANGELES, May 30.-The National Battery Co. of St. Paul will establish a branch plant in Los Angeles to serve the Pacific Coast and the Orient. The National Battery is said to be the fourth largest battery manufacturing company in the United States and L. J. Shields, the president, has announced it is the intention to make the Los Angeles branch the largest and most active. The investment will represent an expenditure of \$250,000.

A. A. A. ADOPTS SLOGAN

WASHINGTON, May 30 .- "Be Good to Your Country" is the slogan of a campaign initiated here by the American Automobile Association for cleaner camps and roadsides and for the preservation of wild plant life in the 1925 touring season.

FORGER IS APPREHENDED

CLEVELAND, May 30 .- A forger who has cashed many worthless checks purported to have been issued by the Willard Storage Battery Co., was recently traced and apprehended at Keokuk, Ia., through the co-operation of Willard service stations throughout the country.

The trail led from Georgia to Iowa. At Keokuk, A. H. and T. J. Conradt, operating a Willard service station, notified the hotels to be on the lookout for a man giving the name J. B. Watson who might present what appeared to be a Willard company check in payment of his bill. When the man appeared at a Keokuk hotel he was detained by the

MILES SHOWS IMPROVEMENT

NEW YORK, May 30.-The condition of Sam A. Miles, show manager of the National Automobile Chamber of Commerce, who has been seriously ill at the Harbor Sanitarium since May 14, has shown slow but consistent improvement. While it is too soon to say that he is entirely out of danger, strong hopes are now held out for his recovery.

The vitality of Mr. Miles, who is 62 years old, has amazed his friends and the physicians at the sanitarium.

Ethyl Gasoline Will Undergo Series of Tests in Baltimore

Surgeon General Cummings Shows Keen Interest-In Charge of City Authorities

WASHINGTON, D. C., May 30.-Pending the naming of the committee to investigate ethyl gasoline Surgeon General Cumming has shown keen interest in an offer from Dr. John H. Shrader, director of the Bureau of Food and Chemistry of the City Health Department in Baltimore to co-operate with the Federal Public Health Service in conducting tests in Baltimore to determine the amount of lead apt to get into the city's atmosphere as a result of using tetra-ethyl-lead in motor gasoline.

A number of automobiles belonging to the City Health Department, Dr. Shrader advises, will be filled with gasoline treated with tetra-ethyl-lead and will be driven about in a space capable of observa-

Samples of the atmosphere near where these machines are operating will be taken and analyzed.

25 Years Ago In the Automobile Industry As Recorded In Motor Age (From Motor Age of June 7, 1900)

Giant Truck

NEW YORK, June 4.—The first successful automobile truck for heavy trucking made its appearance in active service yesterday. It was built for George A. Kessler & Co., of 20 Beaver Street, importers of Moet & Chandon champaign, and carries easily and gracefully its load of four tons at a speed of six miles per hour.

It weighs 8,800 pounds, including the battery equipment, which has the capacity of a 25-mile drive on each charge, over level asphalt or macadam, with a nominal power of ten h. p., which can be worked up for a short time to more than twice this.

The Philadelphia Automobile Row

PHILADELPHIA, June 4.-The tendency of houses in the same line of business to "flock together" is in a fair way of being demonstrated by local automobile concerns, which are putting up their shingles along the block and a half of North Broad Street, extending from Cherry to Vine streets. Already fully a half a dozen agencies, exchanges, liveries or repair shops are situated on that asphaltpaved thoroughfare, and, in not a few instances, the portion of the street mentioned has been denominated in local dailies as "Automobile Row."

A Remarkable Trip

On Saturday, May 26, Messrs. George L. Weiss of Cleveland and J. W. Packard of Warren, Ohio, made a trip from Cleveland to Buffalo in Mr. Weiss' gasoline automobile. The machine is one of the terest and excitement over the events.

standard road machines built by the New York & Ohio Co., from whom the following details were obtained:

The departure from Cleveland was made at 5 a.m., and Buffalo was reached before 10 p. m. The actual running time was 131/2 hours, and the distance covered 225 miles. * * Only nine gallons of gasoline were consumed.

Rochester Automobile Races

Rochester, N. Y., was the scene of automobile races on Decoration Day in connection with trotting races. The first event was an exhibition mile in 1:27 2-5 by the Sterns pacing machine, after which George Loysen on his bicycle followed it a mile in 2:08 1-5.

The one mile race for steam vehicles carrying two persons had three starters and was won by Joseph McDuffee in 2:17, with J. Foster Warner second and Henry Willis third.

The one-mile race for electrics carrying four persons had three starters and was won by C. J. Connolly in 5:20 by a length from J. H. Sager, with I. L. Hechinger third.

The fivemile event, open to all classes of vehicles, had six starters. Joseph McDuffee won in 15:421/2, with J. H. Sager second and F. H. Bettys third.

The last event was a one-mile handicap in which starts of as much as half the total distance were given. Joseph McDuffee scored his third victory in 2:17 from scratch, with J. Foster Warner second and J. H. Sager third.

There was an immense amount of in-

Coordinated Transportation Favored at Regional Meeting

Gathering Is Second Fostered by N. A. C. C.—Complete Harmony Prevails

CHICAGO, May 30.—A second big regional meeting under the auspices of the National Automobile Chamber of Commerce to further the project of better understanding among different transportation services and thereby bring about co-ordinated service and reduce transport waste, was held in Chicago at Hotel La Salle recently.

The first meeting of this character staged by the N. A. C. C. was held in New England in December. Other regional meetings will be held later.

Agree on Co-ordination

Developments in the Chicago gathering established without doubt that the chief transportation competitors, automotive, electric and steam, are in full accord on co-ordination. It was mutually recognized by the delegates that there is a definite place in transportation for the steam line, the electric line, the truck and the bus.

On the other hand, the automotive interests made it plain that the automotive industry wants to shoulder its full share of the public obligation. The fact that the National Automotive Chamber of Commerce had taken the initiative in throwing all issues into open forum was pointed out as ample proof of the automotive industry's sincerity in this movement. It was stated by one of the railroad speakers that in all probability the next Congress will act on a bill giving the Interstate Commerce Commission jurisdiction over interstate highway transportation. This opened up discussion relative to interstate motor transport regulations. Spokesmen for the automotive industry held that the Interstate Commerce Commission's authority should be practically limited to issuance of certificates of necessity and convenience. Railroad speakers took the position that the commission should have rather comprehensive authority. These two schools of opinion from all indications will be present in Washington when the issue comes up before the national legislative body next winter. Touching on the subject of co-ordination and regulation, it was suggested by John A. Ritchie, president of the Chicago Motor Coach Company, that there should be co-ordination of the administrative powers.

Bus Value Greater

A. J. Brousseau, president of Mack Trucks, Inc., who outlined the objects of the conference in the opening speech, predicted a wide range of uses for the motor bus and the growing value of the truck the utilities of which have been forced into the general transportation problem.

"The private passenger car," said Mr.

Brousseau, "the public bus and the motor truck serve not alone the public, but the other and older transportation agencies as well. The task which confronts us is to find out how to employ these instruments to the best advantage of all." He declared that the problem is one which is beyond the ability of any single group to solve.

The increasing use of trucks by railroads and of buses by electric lines was brought out in the talks and discussions. Electric lines that have adopted the bus as an auxiliary transportation device find it fills a large economic need. Comments by representatives of such companies were interesting and they were practically all strong advocates of the idea of harmonizing the actual values of the different types of service.

William M. Jardine, secretary of agriculture, was the feature speaker of the final session, discussing the public relation to highway transport. He called on the rail and motor transport leaders to work together in order to give the public the best possible service without the waste of unnecessary duplicated effort.

Post-Season Rainfall Hits Northern California Sales

SAN FRANCISCO, May 3.—While preparing for a banner prosperity year, California was visited with a post-season rainfall starting towards the end of May which has thrown a cloak of pessimism over the entire northern portion of the state. The extent of the damage will not be known for some time but it is enough to make this year below normal.

The automotive trade in particular will feel the effects of the disaster. Dealers were preparing for bumper business during the late summer months with assurance from the farmers that crops would be far above normal. The trade is hoping that the late rain will prove of some benefit in keeping pastures green longer than is usual. Indications are now that the late fruit crop has been harmed little if any.

Sales are about on a par with this time last year although still far below normal. The closed car is predominating with the open car sales showing a marked drop off from last year. Commercial car sales are less than this season last year by about 10 per cent,

NORTHWEST OUTLOOK GOOD

SPOKANE, Wash., June 1.—R. S. Cole, sales promotion manager of the Hupp Motor Car Corporation, who was in conference here recently with Ahrens & Ahrens, Hupp distributors in Spokane, said that prospects are bright throughout the Pacific Northwest.

TRACTOR SALES INCREASE

CLEVELAND, May 30.—The Cleveland Tractor Co., reports that sales of tractors have increased materially this year over last

Willys-Overland Earnings For May Over \$4,000,000

Demand for Six-Cylinder Cars Still Exceeds Output—Prospects for Future Good

TOLEDO, May 30.—May Willys-Overland earnings will be approximately the same as those of April, according to a statement made today by President John N. Willys. The April balance sheet shows earnings considerably in excess of \$4,000,000 before taxes and depreciation, as was expected. Willys-Overland production up to the end of May will be approximately 100,000 for the five months' period, the largest record in Willys-Overland history.

It now seems assured that May earnings will be approximately the same as April, making for the five months before taxes and depreciation about \$11,000,000. There is every indication of a continuation of the present highly satisfactory business.

The demand for the new six-cylinder Willys-Knight and Overland cars, according to Mr. Willys, is still greater than the company can supply, and sales of the four-cylinder Willys-Knight and Overland closed line continue to exceed any previous Willys-Overland record.

Missouri Gasoline Tax Law To Be Tested in Friendly Suit

ST. LOUIS, Mo., May 30.—A friendly test suit to obtain a ruling on controverted points in the 2-cent gasoline road tax law will be filed soon, according to a statement of Asa W. Butler, state oil inspector.

Several large companies which consume great quantities of gasoline have been buying direct from wholesalers and storing the gasoline in their own tanks, contending that the initiative proposition adopted last November placed the tax on the dealers. This was clarified by the enactment of a bill by the Legislature specifying that the tax be on the consumer.

Between \$20,000 and \$25,000 is due the state from gasoline used between Jan. 1 and April 6, the state contends. A penalty of 50 per cent of the tax due may be imposed.

SHOCK ABSORBERS FOR FORD

ROCKFORD, Ill., May 30.—The Burd High Compression Ring Company has received a contract for over a million dollars worth of Burd-Gillman shock absorbers for the Ford Motor Company.

The absorber is being manufactured in the Burd-Ring plant in Michigan City, Ind., but to fulfill the contract some of the work will be done in the main plant here.

The absorber is to be offered by the Ford sales department as optional equipment as balloon tires.

California to Be Organized By N. A. D. A. During Fall

Work Is Expected to Be Completed by December—Move Proposed by Coast Dealers

ST. LOUIS, May 30.—Proposals for state organization work made by California automobile business leaders to officials of the National Automobile Dealers Association, will be accepted, it was announced here today by C. A. Vane, general manager of the National Automobile Dealers Association.

"Demands from dealers in many states for the N. A. D. A. to apply this same plan of dealer organizations make it rather difficult for us to make any definite promises as to when we can undertake the work in California," said Mr. Vane in his announcement. We have made tentative plans, however, for moving our entire organization into California about the first of November and working a fast schedule cover the state rapidly. This will give us an opportunity to complete most of the California work by about the middle of December."

Vice President Wm. L. Hughson of San Francisco, Directors Perry Greer of Los Angeles and A. D. Plughoff of San Francisco have been assured that the N. A. D. A. will make every effort to carry out this tentative arrangement.

Cleveland Buying Capacity Shown in Important Survey

CLEVELAND, May 30.—One of the most important accomplishments in the automobile industry recently is the survey of the buying capacity of Cleveland, made by Edward Payton for the Cleveland Automobile Manufacturers and Dealers Association.

The purpose of the survey is set forth in the statement that the soundest basis for fixing sales quotas is afforded from a close analysis of the consuming mar-

The survey discloses that the buying capacity for Cleveland is indicated by the fact that the per capita expenditures for the necessaries of life are approximately \$17.00 or more per capita per annum than the national average. In Cleveland nearly 80 per cent of the families own some motor car of some make, whereas the national average is around 65 per cent.

Speaking of organization, Mr. Payton said that any plan of organization, to be highly effective, must be sharply definite, the duties of every man in every department must be clearly outlined, the authority and responsibility of every man must be definitely fixed, since authority and responsibility are inseparable to effective service.

FORD SALE CONTEST ON

MINNEAPOLIS, May 30.—Ford dealers in the Twin Cities are engaged in a friendly intercity battle to see which city can sell most Ford cars.

Way Back When In St. Louis



ST. LOUIS, Mo., June 1.—Dr. Emil V. Dittlinger, for 40 years a practicing physician in St. Louis and the designer and builder of one of the first "horseless carriages" in St. Louis, died here recently at the age of 67 years of heart disease. The Doctor with his wife and three sons are all shown in the above picture.

Dr. Dittlinger during the late 90's saw the dawning of the physician's emancipation from the care and expense of the horse-drawn vehicle. In 1897 he visited the early automobile manufacturing plants in this country, at Decatur, Ill., and at Detroit, and returning to St. Louis proceeded to construct a motor vehicle along his own ideas.

The car pictured above was equipped with a two cylinder engine and according to a newspaper description of that time was "double-opposed and perfectly balanced." It greatly resembled the fashionable buggy of its time.

FORD TRUCK SALES GOOD

DETROIT, May 30.—Sales to owners of the Ford one ton truck in the first four months of the year totaled 71,352, which compares with 65,111 for the same period in 1924. A large percentage of the sales were of vehicles complete with cabs and bodies

DURANT HAS WHOLESALE OFFICE

MEMPHIS, Tenn., May 30.—The Durant Motors, Inc., have opened a new wholesale office in Memphis at 1108-1111 Exchange Building. H. D. Apgar, as sales manager, will supervise wholesale business of Star and Durant cars in west Tennessee and the states of Arkansas, Louisiana and Mississippi.

BUS FRANCHISE ASKED

DALLAS, Tex., May 30.—Application has been made to the city commission by Claude D. Cain of Dallas for a franchise to establish a line of motor omnibuses here for passenger transportation services.

California Durant Company Votes Six Per Cent Dividend

OAKLAND, May 30.—The second regular quarterly six per cent dividend has been voted and declared for nearly 5,000 stockholders of the Durant Motor Company of California, according to a recent statement issued by Norman DeVaux, vice-president and general manager of the company.

In his statement, DeVaux summarized conditions by stating sales were good and increasing all over the Pacific Coast. A big increase in number of dealers has been registered this year.

ESTABLISHES FLINT BRANCH

NEW YORK CITY, May 30.—William C. Durant, following a visit to Boston, has completed plans whereby he will buy out the Connell & McKone Company, who have had the Flint for New England since it was placed on the market. He will operate it as a branch, just as he is doing with Durant and Star in Boston.

Internal Revenue Collection For April Better Than 1924

Decrease Is Shown for Parts and Accessories—Aggregate Also Shows Loss

WASHINGTON, May 30.—April collections of the Internal Revenue Bureau from the automotive industry totalled \$13,239,951.03 or \$292,291.72 more than the same month in 1924. Receipts from the industry for the period July 1, 1924, to April 30, 1925, which were \$97,586,-715.28 show a decrease of \$32,829,243.05 from the period July 1, 1923, to April 30, 1924, when the total was \$130,415,958.33.

The aggregate receipts of the bureau for the month of April is given as \$106,504,211.15 or \$17,672,449.90 less than in April, 1924. The aggregate receipts for the period July 1, 1924, to April 30, 1925, is given at \$2,035,486,362.14 which is \$235,493,564.56 less than the sum collected in the corresponding period in 1923 and 1924.

A substantial loss is shown in collections from "automobile trucks and automobile wagons" during April last when the total was \$497,740.03 as compared with \$1,104,739.70 in April, 1924, while an increase is shown in collections from "other automobiles and motorcycles" in April, 1925, with \$11,121,283.51 as compared with \$9,510,074.26 for April, 1924. The classification "automobile parts and accessories" during April, 1925, netted \$1,620,927.49, compared to \$2,332,845.35 for April, 1924.

Houston Automobile Show Exceeds Best Expectations

HOUSTON, Texas, May 30.—The recent annual spring show of the Houston automobile dealers was a decided success, reports from those who participated said. Eighteen of the biggest dealers in Houston displayed cars during the five days show. Twenty-five thousand persons visited the show rooms. Dealers said the attendance was larger than they expected.

The dealers did not crowd their show rooms. They used more than 27,000 square feet of space displaying cars to the best advantage. The prospects were able to inspect cars and learn of their best points at leisure.

Sales have been showing a decided increase since the show closed. Another show will be held during the fall.

WINONA GETS FORD CARGO

ST. PAUL, Minn., May 30.—The first cargo of Ford motor cars from the new Ford plant was taken by Mississippi river barges to Winona, Minn., recently. Winona is the southernmost city in the St. Paul jurisdiction. Light barges are being built in St. Louis, Mo., for use in the Ford Motor Company service. A \$250,000 terminal for loading and unloading purposes has been built.

Average Car Value in Baltimore \$395

BALTIMORE, Md., May 30.—Statistics, just compiled by the Municipal Bureau of Receipts for the city, show that there are 65,000 automobiles and commercial motor trucks registered within the corporate limits. They are owned by 61,000 individuals and corporations. The assessed value of the total is \$25,724,350, or an average assessment of \$395 per vehicle.

Georgia Bus Lines May Be Controlled by Commission

ATLANTA, Ga., June 1.—At the request of Captain W. G. Roper, president of Dixie Coaches, Inc., of Atlanta, one of the largest independent motor bus operating companies in the South, the Georgia Public Service Commission has taken initial steps toward assuming jurisdiction of the bus lines in Georgia. It is considered a certainty that the Georgia Legislature will pass the motor bus bill at its coming summer session due to the fact that bus operators will offer little or no opposition to its passage.

This bill, which has come up every year for the past four sessions, would make the bus a common carrier subject to the same rules and regulations as the railroads, and under the direct jurisdiction of the Georgia Public Service Commission. It is similar to the Virginia law which has proven of considerable benefit to the industry in that state, rather than detrimental to its future progress and expansion as was first feared by operators when the law was passed.

RECEIVER MAY SELL WESTCOTT

SPRINGFIELD, O., May 30.—J. M. Rehe, receiver for The Westcott Motor Car Company, who has just returned from an Eastern trip, reports that a deal may be closed soon by which the franchise will be purchased by outside parties and a new company organized for the manufacture of the Westcott cars. Two dealers are said to be under way for the purchase of the franchise.

THOMPSON SHIFTS PERSONNEL

CLEVELAND, O., May 30.—E. G. Thompson, vice president and general manager of Thompson Products, Inc., has announced the promotion of Clyde T. Lamb to district manager of sales for Ohio, Michigan, Kentucky, West Virginia and parts of Maryland, Pennsylvania and New York.

Paul V. Spain has been put in charge of the Western Central Territory, while C. W. Sawyer is now on the road as missionary man.

S. A. E. Formally Installs Southern California Chapter

New Chapter Has Total Membership of 115—W. L. Moreland Elected Chairman

LOS ANGELES, May 30.—With H. L. Horning, national president, officiating, Southern California Chapter of the Society of Automotive Engineers, was formally installed Friday here with a membership of 115.

This is the first section established in the west. It is expected to be followed in the fall by the installation of a San Francisco chapter. Civic officials joined with all branches of the automotive industry in welcoming the new chapter, regarding the establishment as marking a new epoch in automotive activities on the coast.

W. L. Moreland, president, Moreland Motor Truck Company, was elected chairman; F. D. Howell, of the Motor Transit Co., vice-president, Jerome S. Canavan, of Canavan Motors Corp., treasurer, Eugene Power, of Union Oil Co., J. H. Harkness of Los Angeles Rolls-Royce Co., E. B. Moore, Los Angeles Automotive Works, members of the governing board, Ethelbert Favary, secretary.

Gasoline Economy Necessary To Prevent Price Increase

WASHINGTON, May 30.—Automobile owners must practice gasoline economy.

This is the warning being broadcast here to the nation's 17,000,000 motorists by Thomas P. Henry, president of the American Automobile Association, who sees in economy the chief weapon in the motorists' hand to combat the soaring price of gasoline. The A. A. A. is calling upon its 700 affiliated clubs to give definite suggestions to their membership as to how gas can be saved.

According to information received at A. A. A. headquarters from the U. S. Bureau of Mines, the average automobile owner is wasting 30 per cent of his gasoline power. This wastage, according to the Bureau of Mines' analysis, is due largely to improper carbureter adjustments, resulting in the exhausting of usable gas vapor.

A. J. BRANDT JOINS OAKLAND

DETROIT, May 30.—A. J. Brandt has been appointed works manager of the Oakland Motor Car Co. He has been identified with DuPont and General Motors projects for the major part of the past ten years, during the greater part of which he was associated with A. R. Glancy, now president of Oakland. In 1920 he became works manager of Samson Tractor Co. and three years later became manager of the Fisher Body Plants at Janesville, Wis., and Lansing.

Last Stronghold Falls; Isles of Bermuda To Import Trucks

BERMUDA, May 30 .- The last stronghold in the world has fallen before the automobile. The right little isles of Bermuda are to have two motor trucks for government use.

Bermuda has been the lone spot on the earth's surface where the use of motor vehicles has been prohibited by law. For that matter, it still is, for governmental authorities declare that there is no intention of repealing the prohibitory regulations.

Nevertheless, two trucks are to be purchased for use in repairing roads. It was the Board of Works of the Bermuda Government which obtained authority, after a prolonged fight in the legislative assembly, to purchase two motor trucks of 21/2 to 3 tons capacity for the purpose of transporting crushed stone from one part of the island to another.

The reason for the unique anti-automobile law of Bermuda has been the character of the islands as a rest-resort. Their roads have carried only pedestrians, horse-drawn vehicles and bicycles. But even such roads need repairs, and hence the Bermuda Government has bowed to the inevitable and at last entered the ranks of users of modern motor transport.

Texas Dealer Association Approves of Code of Ethics

DALLAS, Tex., May 30 .- The Texas Automotive Dealers Association at the annual convention in Austin, unanimously adopted a code of ethics by which closer co-operation between the members and between the dealers and their customers is expected to be brought about.

Briefly the code of ethics of the Association provides:
The dealer will apple: the

Briefly the code of ethics of the Association provides:

The dealer will employ the golden rule in relations with his employes.

The employes must be loyal to the company for which they work.

The dealer will give the employes a square deal. Ability and inability must be the basis for hiring or firing employes. The dealer will be courteous to salesmen and the salesmen must be cooperative. Team work will be the watchword in the establishment of the members of the association.

Square dealing, fair play and honest competition will be the basis of the members in relation to each other. Every dealer is expected to take a lively part in the civic affairs of his community.

Dealers will be absolutely truthful in their advertising matter and will not lend their names to any questionable enterprise.

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their names to any questionable enterprise.

The automotive dealer shall at all times seek to elevate the standards of the automotive business by practicing the ethical standards set forth in this code, and be enthusiastic in encouraging others engaged in business to do likewise. Each executive or owner who conducts his business so that his honor will never be besmirched by his own acts or omissions, will aid in maintaining the honor of the automotive business.

N. S. P. A. List Will Show Comparative Sales Volume

DETROIT, May 30 .- Following the recent meeting of the merchandising committee of the National Standard Parts Association, the association will issue a list showing the comparative volume of sales of various items of replacement parts over the country. Two other reports by the merchandising committee will also be issued within the immediate future-one, on methods of merchandising used by parts jobbers in getting distribution, and the other on analysis of the parts jobbers business, enabling any company engaged in this business to check his experiences with results which committee investigation shows to be pos-

The committee also authorized the is-

suance of a sample catalogue embodying recommended standards for use by both manufacturers and jobbers. The recently prepared paper, "Standard Brands of Replacement Parts," will be printed in booklet form by the association for use by members in establishing the position of standard brands as against genuine parts in the present day replacement

HEADLIGHTS MUST BE OKEH

LOS ANGELES, May 30.—An entangle ment in regard to the inspection and sale of headlight equipment has arisen in California that eventually may necessitate court action to solve. The headlights on every vehicle in use must be certified as to their meeting the legal requirements. These certificates are issued by inspection stations appointed through the state division of motor vehicles.

The law specifies certain requirements similar to those standards adopted by the National Illuminating Engineers. Dealers are prohibited from selling a vehicle the lights of which do not con-

TAX LAW HELD VALID

MINNEAPOLIS, May 30.-Judge W. W. Bardwell of the district court has held the state motor vehicle tax law valid. The constitutionality was attacked of the section providing that trucks carrying freight on time and route schedules pay 10 per cent of the value of the truck. Action was brought by Flody and Percy Raymond to compel the secretary of state to issue a license for trucks operated by them at 234 per cent, effective on other classes of trucks. The secretary filed a demurrer, as registrar of motor vehicles, in the action for writ of mandamus. The order was filed sustaining the demurrer.

HUDSON-ESSEX PLACE ORDER

MILWAUKEE, Wis., May 30.-One of the largest individual orders for conveyor equipment that has ever been placed with the Chain Belt Co. of Milwaukee is that for additions now being made to the Hudson-Essex factories in Detroit.

Moon Forms Diana Motors To Market Straight Eight

Lightweight Construction Features New Car-Formal Announcement Will Be Made June 25

ST. LOUIS, May 30 .- Stewart McDonald, president of the Moon Motor Car Company, St. Louis, Mo., announces the formation of a new organization and product, the Diana Motors Company and the new Diana Light Straight "8".

In an interview at the main plant of the Moon Company Mr. McDonald stated: "There is a crying need and a national demand for a new type motor car, something of unusual power and flexibility combined with real light weight. A car to meet the modern conditions of motoring, high speed for the open concrete highways, urgent quick acceleration to cope with the emergencies of jockeying in congested traffic, easier steering and handling to dovetail with the needs of packed parking spaces in the cities and to facilitate a greater margin of safety for women drivers.

To Be Lightweight

"In the new Diana Eight we are building this new-day type automobile. The Diana, we think, will create a sensation when it appears. It embodies many new and radical engineering ideas. It affords easier, smoother riding."

The Diana Motors Company will take its cars direct from the designers and builders, the Moon Motor Car Company. Diana Motors will formally announce the nw product June 25.

The officers of the Diana Motors Company are Stewart McDonald, president, Frederick Rengers, vice president, Carl Burst, vice president, and Stanley Moon, secretary-treasurer. The Diana production for 1925 will be around 7,000 cars.

New Car Deliveries for April In Michigan Show Decrease

DETROIT, May 30.—Deliveries of new cars in Michigan in the month of April totalled 16,524, as against 20,621 in April, 1924. Truck deliveries totalled 1,551, as against 1,708 in the same month last year. Practically all of the reduction in deliveries between the two years were in the low priced car field, Ford showing a falling off of 3,800. In the truck field the reduction likewise was most evident in the light duty group.

Car sales in the state for the first four months of the year were 42,550, and truck sales 4.641. Sales in the first four months last year were 58,090 cars and 5.621 trucks.

OUTPUT TO BE INCREASED

FOND DU LAC, Wis., May 30.-The Tobin Tool & Die Co., Fond du Lac, Wis., is preparing to effect a large increase in its capacity shortly, when it moves into the former plant of the Drophead Projector Corp.



Along Automobile Row



MOLINE, Ill.—J. A. Wyns of the Motor Service Company of this city, has been appointed distributer of the Studebaker car for this section of Illinois. The Wynes battery business will be continued.

BALTIMORE, Md.—The Oldsmobile Company of Baltimore, Oldsmobile distributor, has just moved into much larger quarters which enables it to house all its departments under one roof.

ST. LOUIS—Meyer-Price Motor Co., Inc., has been organized to handle the Kissel car in the St. Leouis district, embracing the territory of eastern Missouri and southern Illinois.

ATLANTA, Ga—Bailey & Company, parts, tire and accessory jobbers, have taken over distribution in this territory of the Lomar shock absorbers. A special department has been established.

SPRINGFIELD, Ill.—E. J. Gaylord has become a partner in the Capital 24 Tire Company and will have general supervision of the wholesale department.

SIOUX CITY, Ia.—C. E. Dailey & Co. have been named Cleveland distributor in this territory.

BEDFORD, O.—Vogel & Sisler, Inc., was recently chartered with a \$75,000 capital, to deal in autos, parts and accessories.

YOUNGSTOWN, O.—The Wick-Rayen Sales & Storage Company has been chartered with an authorized capital of \$10,000 to buy and sell automobiles and accessories and operate a storage garage.

RIVERSIDE, Tenn.—Members of the Memphis Automobile Dealers Association were recent guests of the Ford Motor Company, inspecting the fine new plant at Riverside.

BATON ROUGE, La.—H. L. Deas Motor Company has been established here to specialize in the selling of Ford cars and Ford products.

MINNEAPOLIS—Dunlop Tire & Rubber Company has opened a new direct factory branch in Minneapolis in charge of C. E., Neumann. The territory includes Minnesota, the Dakotas, Montana, Wisconsin and northern Michigan.

PHILADELPHIA—Motor Parts Company, recently added the Zenith carbureter line and has become warehouse distributor of Diamond Grid batteries.

COLUMBUS, O.—The Gale Sales Company has taken over the distribution of the Auburn line. A. Gard Gale is president and general manager.

LITTLE ROCK, Ark.—M. E. Bradford Tire Company has leased the front office of the Enterprise Harness Company. The company is distributor in Little Rock for the Racine Tire Company and the DeForrest Radio.

NEW ORLEANS—E. E. Barton, Jr., has been made sales manager of the New Orleans Auto Supply Company. Hhe was formerly manager of the New Orleans branch of the Automotive Gear Works.

ST. JOSEPH, Mo.—Extensive remodeling of the H. O. Sidenfaden building on Tenth Street between Jule and Francis streets, will begin at once for the Miller Chevrolet

SPRINGFIELD, Mass.—Freeman Motors Company has been formed to retail and distribute the Gardner. William N. Freeman, former manager of the Springfield Company, heads the concern.

NEWTON, Mass.—The Newton Motor Company is the name of a new company that C. E. Fay, New England distributor for Chrysler and Maxwell, has signed up to take the agency in that city and Water-town.

ST. PAUL—Schurmeler-Whitney Company, manufacturers of truck bodies, has begun work on factory No. 2 near the new Ford Motor Company plant. It will front 130 feet.

OKLAHOMA CITY, Okla.—The Oklahoma Flint Motor Co. has been appointed distributors of the Flint line in the Oklahoma territory. A. G. Atkins and F. N. McDowell are the incorporators named.

ROCHESTER, N. Y.—C. W. Glass, Farnklin distributor, has opened a separate used car salesroom. Increased business in used cars prompted the change.

DALLAS, Tex.—P. R. Clark has become district representative for the Timken Roller Bearing Co., with headquarters here.

GREENVILLE, S. C.—The Cadillac Sales Co. has been organized and incorporated at Greenville, S. C., with \$50,000 capital to distribute the Cadillac line in a portion of the South Carolina territory.

BOSTON—The Peerless Motor Car Company has approved the establishing of a distributor for the state of New Hampshire at Manchester by John L. Snow, New England manager.

SALT LAKE CITY—Richardson-Bower, Inc., Dodge distributors and dealers, have opened a used car market in the Sugar House suburbs of this city. The sales manager, Peyton R. Hough, will have direct charge of the new department.

SAN ANTONIO, Tex.—Hirch-Shannon Oldsmobile Co., San Antonio, has been selected Oldsmobile distributor for that section of Texas. The territory comprises about 80 counties.

TAMPA. Fla.—The Tampa Tire Co. is a new jobbing firm recently organized and incorporated here with \$50,000 capital for the distribution of tires in the Tampa and South Florida territory.

DES MOINES—The Motive Parts Company of America, Des Moines, Iowa, has recently been appointed distributor for No-Leak-O piston rings in Iowa.

QUINCY, Ill.—The Porter-Jenks Motor Sales Company, Paige Jewett, distributors in the western Illinois territory, have enlarged their present quarters.

TOLEDO—C. B. Sage, Standard Garage, has been named distributor for the Stutz line of cars in Northwestern Ohio and Southern Michigan.

MEMPHIS, Tenn.—Harter B. Hull recently of the firm of Hull-Cameron Company, Dodge Brothers distributor at Memphis, Tenn., has bought Mr. Cameron's interests.

DECATUR, Ill.—For the first time in some years, the Marmon car will be represented here. The Reo Motor Sales Company has been appointed distributor for the Marmon in the Macon county territory.

MONTGOMERY, Ala.—The Goodyear Tire & Rubber Co. has opened a new southern branch here to handle the company's trade in South Alabama and West Florida territory.

AUBURN, Ind.—Auburn Automobile Company has announced the appointment of a distributor in Portland, Ore.

MARSHFIELD, Wis. — The Felker Brothers Manufacturing Co., of Marshfield, Wis., has started work on a large plant addition which will be used to accommodate the department for manufacturing tank bodies for motor trucks.

LOS ANGELES—Walter S. Gardner has been appointed western service engineer, automotive division, by the Lyon Metallic Manufacturing Company.

MILWAUKEE—The Wisconsin Oakland Company, Milwaukee, since 1915 distributor of the Oakland in Wisconsin and upper Michigan, has taken over the distribution of the Peerless and changed its name to Hokanson-Thompson, Inc., Emil Hokanson, president.

ST. HYACINTHE, Que.—J. C. Drolet has been named Wills Sainte Claire dealer for this locality.

CHICAGO—John Lavery, associated with the Chicago Flint Company for the past two years, has been promoted to sales manager. Mr. Lavery is succeeded by Frank Schaedel of the Chicago Motor Car Company, Jordan distributors.

KANSAS CITY, Kas.—Cleveland-Chandler Motor Car Company has been appointed Cleveland distributors for this territory.

OAKLAND—Nelson & Morrell, distributors of Gruss Air Springs in Alameda county, have been awarded the Gardner motor car franchise for the same territory.

SPOKANE, Wash.—C. A. Wells, proprietor of the Superior garage, has taken in A. A. Machan, formerly of the Coeur d'Alene garage, as a partner and will conduct the business under the same firm name.

BUFFALO—The Apperson is again represented in Buffalo. W. O. Nicholson, the new distributor, has opened salesrooms at 1544-46 Main Street.

SAN FRANCISCO—G. F. Thompson has been appointed manager of the radio division of the Electric Equipment Company at Los Angeles.

HOLMESBURG, Pa.—The Dunning Compressor Company of Holmesburg, Philadelphia, Pa., manufacturers of air compressors, are now adding a large addition to their new factory.

SACRAMENTO, Cal.—Keegan-Webber Company, local Oldsmobile dealers, have taken on the Peerless line for Sacramento and vicinity.

WATERBURY, Conn.—George D. Giebert has been appointed local dealer for the Auburn line.

DENVER, Colo.—Ehler and Durkins Motor Company, 3304 Tajon Street, is now distributors for the Cleveland line in this territory.

GRAND RAPIDS, Mich.—Inner Shoe Tire Company has been appointed local dealers for the Marmon line.

CRANFORD, N. J.—Mathew Herold is now with the U. S. Electrical Tool Company as general sales manager.

MADISON, Wis.—The French Battery & Carbon Company is breaking ground for the first of a series of additions to meet the demand made necessary for batteries for radio and automotive industries.

NATCHEZ, Miss.—The Natchez Auto Parts Co., recently organized, will distribute replacement parts in the South Mississippi River territory.

With the Associations

Dallas Dealers Favor Flat Rate

DALLAS, Texas, May 30.—The flat rate service for repair work features the regular monthly meeting of the Dallas Retail Automobile Dealers Association.

Dealers here believe the time has come when the flat rate system must be used exclusively by the shops.

The meeting was the last one for the association until fall.

Special musical numbers for the meeting were from selections of the Sixties, rendered by women closely in touch with affairs of Confederacy. Several addresses on Confederate topics were heard. That part of the program was in honor of the annual reunion of the United Confederate Veterans which was being held in the city at the time.

Philadelphia Holds Show

PHILADELPHIA, May 30.—The Frankford Automobile Dealers' Association held its eighth annual open air show on Saturday, May 23, at Overington Street, between Frankford Avenue and Penn Street.

The dealers and cars represented are as follows: Roth-Buick Co., Buick; Francis Allen, Paige and Jewett; J. Harry Schumacker, Packard and Oldsmobile; Fred Jones, Hudson and Essex; Studebaker Sales Co., Studebaker; J. B. Klenk, Chandler and Cleveland; Charles McGough, Dodge and Cadillac; M. F. Osler, Maxwell and Chrysler; Alvin A. Swenson, Ford and Lincoln; Harry Guiste, Mash; Willard-Chevrolet, Chevrolet; and Edwin B. Jackson, Inc., Overland and Willys-Knight.

Against Used Car Signs

SACRAMENTO, Cal., May 30.—The Sacramento Motor Car Dealers Association has voted to co-operate with City Manager H. C. Bottorff and the police department in a plan to keep used cars with gaudy signs off of the streets. Bottorff pointed out that the parking problem is growing more and more acute and that the appearance of the city is not improved by curbs lined with used car offerings.

The vote of the dealer body was unanimous and assurances were given that with the co-operation of the leading dealers the police department would see that the ruling is rigidly enforced.

Illinois Association Elects

PEORIA, III., May 30.—A meeting of the Central Illinois Truck Owners Association, held in this city, topics of interest to the membership were discussed and officers elected for the coming year as follows: President, D. B. Menton; vice-president, F. P. Coe; secretary, W. E. Wilson; treasurer, L. E. Stevens.

H. E. Gilbert Heads Credit Men

CLEVELAND, May 30.—Homer E. Gilbert, treasurer of the Ohio Buick Co. and

one of the best known automobile men in Cleveland, has been elected president of the Cleveland Credit Men's Association. He has been active in the affairs of the association for years, serving for some time as chairman of the publicity committee. He has been active in raising funds to combat credit frauds.

Oppose Atlanta City Ordinance

ATLANTA, May 30.—The Atlanta Automobile Association and the new Atlanta Garage Association both have gone on record as opposing the passage of a city ordinance in Atlanta to require all garages and service stations to report to the police department all automobiles entering their places of business which seem to bear signs of injury, accident or damage of any kind, or appear to have been engaged in criminal operations.

The association has taken the stand that such an ordinance would be an undue hardship on garages and service stations, and also would result in considerable inconvenience and embarrassment to motor car owners.

The Atlanta Automobile Association is sponsoring a movement to have the state legislature pass a law requiring drivers of automobiles to have a license indicating their fitness to drive a car.

Esama Has New Manager

ALBANY, N. Y., May 30.—Hon. Lewis G. Stapley of Geneseo, N. Y., is the new general manager of Empire State Automobile Merchants, filling the position recently vacated by Edward A. Moree.

Mr. Stapley is chairman of the standing committee on motor vehicles of the Assembly and chairman of the Motor Vehicle Investigating Committee. He took charge of the office, 25 Washington Avenue, Albany, June 1,

Plans for carrying on the association work on a bigger scale are being formulated by the board of directors and are expected to be carried to a successful season by Mr. Stapley.

St. Paul to Feature Service

ST. PAUL, May 30.—Amendments have been filed to the articles of incorporation of the Automobile Club of St. Paul, Minn., changing it from a purely social organization and making service the main feature. The purpose is to advance the name and interests of St. Paul and Minnesota.

The club will operate garages throughout the city to give storage and service at reduced rates to all members of the A. A. A., and will establish through the state branch service stations and will designate official hotels, garages and information bureaus. The club house at White Bear Lake has been leased and will be open to the public, with regular service as before, special rates to St. Paul members. Milwaukee Elects Dr. Achen

MILWAUKEE, Wis., May 30.—Dr. F. W. B. Achen, president and general manager of the Achen Motor Car Co., Chandler and Cleveland distributor, was elected president of the Milwaukee Automotive Dealers' Association at the first meeting of the newly constituted board of directors. Rudolf Hokanson, vicepresident and general manager, Nash Sales Co., was elected vice-president; Melvin D. Newald, Stewart truck distributor, secretary; Clarence P. Hatter, head of the East Side Buick Co., treasurer.

Bart J. Ruddle was re-elected executive secretary, a position he has held from the day the association was formed nearly sixteen years ago. Directors include Frank J. Edwards, Dodge distributor; Bert Anger, Chevrolet, and Robert W. Leach. Reo distributor.

Michigan Enrolls Members

DETROIT, May 30.—Twenty-three hundred and forty-eight dealers and salesmen heard A. R. Kroh in the series of meetings staged by the Michigan Automotive Trade Association in eight cities in Michigan. As result, the association reports enrolling of 104 members, the majority from smaller communities.

In a report to members on the meetings, W. D. Edenburn, manager of the association, declares them to have been very successful, so much so that the association will try to arrange a series of fall addresses by the same speaker.

Holyoke Names K. R. Charlton

HOLYOKE, Mass., May 30.—The Holyoke Automotive Dealers' Association, at its annual meeting elected the following officers: President, Kenneth R. Charlton; vice-president, Henry Olivier; secretary, Rudolph J. Laporte; treasurer, H. C. Brewster.

It was voted to adopt the Gilroy sales plan by which a used car may be bought at a minimum of \$5 down and \$5 a week.

Hold Traveling Show

SACRAMENTO, Cal., May 30.—A traveling automobile show was a feature of a 400-mile get-acquainted trip staged this month by the Sacramento Chamber of Commerce. Sacramento dealers entered 23 automobiles, which, in addition to constituting the traveling automobile show, provided transportation for a part of the 250 Sacramento business men who made the trip.

Association Hears Editor

ST. LOUIS, Mo., May 30.—Ray Sherman, editor of an automotive trade journal, addressed a meeting of members of the automobile industry at a meeting at the City Club last week, under the auspices of the Association Automobile Service Companies of St. Louis. Representatives of all automotive trade associations in St. Louis were present.

Jordan Survey Reveals Main Points Car Purchaser Favors

Women, Report Shows, Buy for Social Preference—Men Desire Good Motor and Low Price

CLEVELAND, May 30.—Edward S. Jordan, president of the Jordan Motor Co., of this city, has five selling points that he is drilling into distributors, dealers and salesmen in his distributing organization.

He selected these points after making a survey nation-wide in its scope. Questionnaires were sent out to 10,000 men who sell every make of motor cars. They asked what qualities were considered primarily by buyers of motor cars. The answers were tabulated and out of this work came these five selling points.

1. Women buy on body appearances, upholstery, hardware, and the name on the car? They want social preference.

2. Men buy the motor, the price and the trade-in value.

3. Girls and boys prefer roadsters in bright colors.

4. Salesmen want cars with pep and performance for satisfactory demonstra-

5. Everybody mentioned comfort and reliability.

Robert S. Brever President Of Los Angeles Association

LOS ANGELES, May 30.-Robert S. Breyer, general manager of the Troy Motor Sales Company, Southern California Nash distributors, was elected president of the Los Angeles Motor Car Dealers Association at the annual meeting of the organization held recently at the Los Angeles Athletic Club. Mr. Brever succeeds Harry A. Lord, of the Lord Motor Car Company, Jordan and Velie distributors, who has served the association for two years.

Don P. Smith, Moon distributor, was chosen vice-president; Andrew E. Baldwin, general manager J. V. Baldwin Co., Chevrolet dealer, treasurer; E. R. Carpenter, president, Paul G. Hoffman Co., Studebaker distributor, secretary; Leo V. Starr, Hamlin W. Nerney and Harry A. Lord, directors.

Mr. Lord was presented with an engraved silver wrist watch as a token of esteem and in appreciation for his long service with the organization.

NEW CADILLAC DEALERS

DETROIT, June 2.-New dealers appointed by Cadillac Motor Car Company are as follows:

Thomas Motor Company, Santa Fe, New Mexico; The Cole Auto Company, Terre Haute, Ind.; Stevens & Newhouse, Rutherford, N. J.; A. H. Letzler, Houtzdale, Penn.;

ford, N. J.; A. H. Letzler, Houtzdale, Penn.; W. F. Griffin, Prescott, Ariz.; Ottawa Valley Motor Company, Pembroke, Ont.; Charles H. Greer, Port Arthur, Ont. Lintotts Cadillae Co. of Manchester, Manchester, N. H.; The Bigelow Motor Company, Peninsula, O.; McCann Auto Sales, Jackson, Mich.; Wangsness Brothers, Sloux Falls, S. D.; Stebick Auto Sales Co. Inc. Bremerton, Wash. Co., Inc., Bremerton, Wash.

Coming Motor Events

Automobile Shows

- ...June Atlanta Atlanta Automobile Show.
- Boston .Oct. 10-17 World's Rubber and Tropical Exposition.
- Dallas, Tex. Oct. 10-25 Annual Automobile Show, State
 Fair Automobile Building, under
 the auspices of the Dallas Automotive Trade Association. J. W.
 Connell management Connell, manager.
- Annual Automobile Show under the auspices of the Automobile Division of the Green Bay Association of Commerce. De Pere, Wis..
- Fresno, Cal.......Sept. 28-Oct. 3
 Fresno Motor Car Dealers Association. Fifteenth Annual Show in connection with Fresno District Fair.

- Shreveport, La.......Oct. 24-Nov. 8
 Twentieth Annual State Fair
 showing passenger cars, trucks
 and tractors.
- Spokane, Wash Sixth Annual Sportsmen and Tourist Fair.
- Syracuse, N. Y First Summer Automobile Show in connection with Centennial expos sition.
- White River Junction, Vt. Sept. 15-18
 Nineteenth Annual Twin State
 Fair. Passenger cars, trucks and
 accessories. F. L. Davis, manager.

Races

- Altoona, Pa. June 13 Altoona, Pa... Sept. 7 ...July 5 Belgium .. European Grand Prix Race. Charlotte, N. C..... Fresno, CaCl.. Sept. 30 Indianapolis, Ind.....May 30 Laurel, Md June 20 A. A. A. Race, Baltimore-Wash-ington Speedway.
- Los Angeles, Cal.....May 22-23 Los Angeles, Cal.....Nov. 26Sept. 6
- Paris Montlhery track... French Grand Prix. ..July 26

Foreign Shows

- Berlin, Germany.......Nov. 26-Dec. 6 Annual Automobile Show in the Kaiserdamm.
- Kaiserdamm.

 Buenos Aires, Argentina......Oct. 3-13
 Pan-American Road Congress.

 London, England.....Oct. 8-17
 Olympia Passenger Car Show.
- London, England.......Oct. 29-Nov. 7
 Annual Truck Show.
- Rio Automobile Show.

Conventions

- Brussels, Belgium. June 21-26 International Chamber of Com-
- Buenos Aires, ArgentineOct. 3-13 Pan-American Road Congress.
- Automotive Manufacturers' Association Meeting.
- Cedar Point, O ... June 19-20 Annual Convention Ohio State Auto Association.
- Cleveland... .Sept. 14-19 Annual Convention and Exposition of American Society for Steel of Ameri Treating.
- .Sept. 15-16 S. A. E. production meeting and exhibition.
- Colorado Springs, ColoJune 22-27 Summer Convention, Automotive Equipment Association, Bradmoor Hotel.
- Des Moines, Ia......Nov. 1 Automotive Merchants' Associa-tion Convention. Nov. 12-13
- Everett, Wash Annual state convention Washing-ton Automotive Trades Associa-tion.
- Montreal, QueOct. 7-10 Fall convention of the Motor and Accessory Manufacturers Associa-tion.
- PhiladelphiaSeptem S. A. E. Automotive Transporta-tion meet.
- .Oct. 12-14 Pittsburgh, Pa Pennsylvania Automotive Association Convention.
- .. May 21 San Francisco... Pacific Coast Sales Congress.
- Schenectady, N. Y May 28-30 Spring Sectional Meeting, American Society for Steel Treating.
- June 24-26 Seattle, Wash., National Foreign Trade Council Convention.
- Spokane, Wash... National Automobile Association Sales Meeting. National Dealers'
- South Bend, Ind..... Advertising Managers Members of N. A. C. C. in conjunction with M. A. M. A.
- Annual Convention of National Tire Dealers' Association.
- Tuscaloosa, Ala July 20-21 Midsummer meeting of the Alabama Automotive Trades Associa-
- White Sulphur Springs, W. Va...June 15-19 S. A. E. Summer Meeting.

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Favor Standardized Course For Electrical Mechanics

Movement Sponsored by Automotive Electric Association—Will Cover All Phases

DETROIT, May 30.—Preparation of a standardized course of training for automotive electrical mechanics has been undertaken by the Automotive Electric Association in cooperation with the Automotive Electric Service Association. The work of drafting the course has been placed in the hands of the Standards and Service Managers' committees of the A. E. A.

When the course is completed and approved, the associations will recommend that training schools offering instruction in this field, conform to it. Such schools as do follow the standardized course will be permitted to make a statement to that effect in their advertising.

Outline Is Given

As tentatively outlined, the course will cover not only the technical phases of automotive electrical service but also the business and organization sides. For this work the use of the booklet entitled "Profitable Electrical Service," which was recently issued by the A. E. A. will be recommended as a guide.

Adoption of a standard form on which dealers will report work done during the warranty period of the manufacturer, has been recommended by the Service Managers committee of the Automotive Electrical Association. The form recommended has the advantage that the dealer has only to check the work done. It is felt that this arrangement will have the effect of promoting the use of flat rate selling as it provides the dealer with an analysis of the possible work on each unit of the electrical system.

White Sales Contest Won By New Orleans Branch

NEW ORLEANE, La., May 30.—The New Orleans factory branch was the winner of the President's Trophy Sales contest conducted recently by the White Company of Cleveland. Announcement that the New Orleans district won the prize was made by the board of judges, based on figures compiled by Comptroller S. G. Crilly.

New Orleans won the national district trophy by a margin of four points over St. Louis. The southern region won the national regional trophy by seven and a fraction points over the western region.

President Walter C. White will award the trophy at a "championship dinner" to be held in Orleans in the near future. The names of all the members of the New Orleans office will be engraved on the trophy, it was announced.

TAKES CHARGE OF SALES

CHICAGO, May 30.—A. M. Landaker has been appointed vice president in charge of sales and advertising for The Narlipp Company.



He Wants a Car



Rochester Minn. May 19, 1925. Ellis Motor Co. Dear Sir please let me know you have a 1924 or 25 Dodge Chev Ford Roadster or coupe. with trailer and Box also license. You will exchange for night work in Garage ten eleven or twelve hrs at 50c Per Hr also furnish you ten to twenty cords wood, ten dollars cord and Possibly Some Cash in fall references Chris Peterson R F D No. 6. I am Yours Truly John Bruckman Care Gen Del.

On the Surface

Jones-"I hear your wife had an accident with the car."

Smith—"Oh, it was not serious."
Jones—"Anything damaged?"

Smith—"Oh, no; just a little paint scratched off both."

-Epworth Herald.

Slow and Fast

He—"Is she progressive or conservative?"

She—"I don't know. She wears a last year's hat, drives a this year's car and lives on next year's income.

-Modern Grocer.

The Roomy Car

I want to buy a 5 or 6-room modern 1924 touring car with extras.—(Ad in Milwaukee paper.)

The Truth Hurts

"Hallo Cauliflower," said a facetious young man to a farmer who was driving along a country road. "Give a fellow a lift to Lumtown?"

Without waiting for a reply he jumped into the car. "I might as well ride with you as walk."

After two or three miles had been covered the young man paused for a moment in his chatter. "It's farther to Lumtown than I supposed," he remarked.

"It's a good distance," said the farmer. Another 20 minutes passed and then the young man inquired, "About how far is it to Lumtown?"

"Well," replied the farmer, "keepin' straight on the way we're goin' now I should say 'twould be a matter of several thousand miles, but if you was to get out o' my cart and walk it back it isn't very much above eight miles."

-Edinburgh Scotsman.

Got the Air



The doctor said, "Buy a machine. Go out and get the air."

To save my life I did so, and that's how I met Claire.

I grew quite mad about her, my love I did declare.

But she answered as the doctor did, "Go out and get the air."

-Amherst Lord Jeff.

SPEED UP PRODUCTION

SPRINGFIELD, O., May 30.—Production is being speeded up at the plant of The Kelly-Springfield Motor Truck Company, Pearl A. Lewis, general manager, states. Good sized shipments are being made. Besides increasing production the company has added a few skilled men to its force.

REPORTS BUSINESS AS NORMAL

ST. LOUIS, Mo., May 30.—Russell E. Gardner, Jr., president of the Gardner Motor Car Co., who has just completed a trip through the East where he visited publishers, bankers, automobile distributors and dealers, said he looked for a lively business in the automobile industry during the balance of the year.

"Business as a whole is just about normal," he said, "although probably not up to the boom expectations of early March, but a feeling of confidence and optimism prevails wherever you go."

State Highway Officials to Designate Interstate Roads

CHICAGO, June 4.—Highway officials of Wisconsin, Michigan, Indiana, Illinois, Ohio and Kentucky meet in Chicago on June 4 to designate the important interstate roads in these states which will be uniformly marked as United States highways, it is announced here. The meeting is the outcome of the initial conference of the Joint Board on Interstate Highways composed of State and Federal highway officials and which was held in Washington, D. C., April 30 and 21.

The selected routes will be designated by numbers and marked uniformly in all states with a standard marker. As a basis for the selection of the routes, each state highway department will present at the meeting a map showing the routes within the state which, in the opinion of the department, should be selected.

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Prices and Weights of Current Passenger Car Models

SHIP.	SHIP. WT. PASS. BODY STYLE. PRICE	SHIP.	SHIP. WT. PASS. BODY STYLE. PRICE
WT. PASS. BODY STYLE. PRICE	.,	WT. PASS. BODY STYLE. PRICE	
AJAX	CHANDLER (Cont'd) 3309 5-p Coach 1,595	DUESENBERG	3650 5-p Brougham 2,200 3765 5-p Sedan 2,800
5-p Touring \$865 Sedan 995	3309 5-p Chummy Sedan 2,045	Straight "8" 3920 3-p Roadster \$6,850	HERTZ D-1
	3469 5-p Met. Sedan 2,195	3920 3-p Roadster \$6,850 3700 5-p Phaeton 6,500	3360 5-p Sedan \$1,695
ANDERSON "41"	3428 5-p Sedan 4 d. 1,995	3920 7-p Phaeton 6,850	HUDSON "Super Six"
2650 5-p Touring \$1,195 2675 4-p Sp. Touring 1.445	3521 7-p Sedan 2,195 3598 7-p Limousine 3,095	3980 4-p Sp. Phaeton 6,850	3425 7-p Phaeton 1,500
2675 4-p Sp. Touring 1,445 2925 2-p Coupe 1,425	CHEVROLET	4-p Coupe 7,500	8450 5-p Coach 1,250
2875 5-p Sedan 1,695	"Superior" (Series K)	5-p Sedan 7,700 4350 7-p Sedan 8,300	Brougham 1,595
2925 5-p Sp. Sedan 1,895	1755 2-p Roadster \$525	DU PONT "D"	3585 5-p Sedan 1,695 8675 7-p Sedan 1,795
"50"	1870 5-p Touring 525	3800 2-p Roadster \$2,600	
2975 7-p Touring 1,595	2015 2-p Utility Coupe 715	3550 5-p Touring 2,600	HUPMOBILE "R" 4 2595 2-p Roadster \$1,225
3200 7-p Sedan 1,945	2110 5-p Coach 785	3800 7-p Touring 2,750	2595 2-p Roadster \$1,225 2745 5-p Touring 1,225
APPERSON "6"	2220 5-p Sedan 825	3550 5-p Touring Sedan 3,400	2760 2-p Coupe 1.350
5-p Phaeton \$1,695	CHRYSLER	DURANT A-22	2895 5-p Club Sedan 1.375
3100 5-p Sp. Phaeton 1,750	(112¾ in. W. B.) 2805 4-p Roadster \$1,625	2300 2-p Roadster \$1,080	"E" 8
8145 4-p Coupe 2,250	2730 5-p Touring 1,395	2-p Spec. Roadster 900	2-p Roadster 1,795
3470 5-p Sp. Sedan 2,250	2785 5-p Phaeton 1,495	3225 5-p Touring 830 5-p Spec. Touring 950	3135 5-p Roadster 1,895 Touring 1,795
5-p Brougham 2,150	5-p Coach 1.545	2395 4-p Coupe 1,160	2-p Coupe 2,095
"ST 8"	2935 4-p Brougham 1,895	4-p Spec. Coupe 1,285	3295 4-p Coupe 2,095
5-p Sp. Phaeton 2,850 Coupe 2,750	3060 5-p Sedan 1,825 3085 5-p Imperial Sedan 2,065	2505 5-p Sedan 1,190	3410 5-p Sedan 2,195
4-p Brougham 2,650	3090 5-p Crown Sedan 2,195	5-p Spec. Sedan 1,310	JEWETT "23-25"
5-p Sedan 2,750	(118¾ in. W. B.)	2430 5-p Coach 1,050	8025 4-p Roadster \$1,630
AUBURN "4"	3225 5-p Town Car 3,725	5-p Spec. Coach 1,100	2835 5-p Touring 1,205 3015 5-p De Luxe Touring 1,320
5-p Touring \$ 795	CLEVELAND "31"	ELCAR "4-41"	2835 2-p Bus. Coupe 1,840
"6-43"	2325 5-p Touring \$ 895	2560 5-p Touring \$ 995 2585 5-p Demi Sp. Touring 1,095	3025 5-p Sedan 1,580
2610 5-p Special Touring 1,395	2580 5-p Sedan 1,195	2641 5-p Sportster 1,195	3305 5-p De Luxe Sedan 1,780
2900 5-p English Coach 1,945	2750 5-p Touring 1,095	2779 5-p Coach Sedan 1,295	3000 5-p Coach 1,260
2885 5-p Sedan 1,595	2810 5-p Touring De Luxe 1,195	2900 5-p Sedan 1,495	8110 5-p Sp. Brougham 1,555 JORDAN "K"
"8-88"	2910 5-p Sp. Touring 1,295	2779 5-p Brougham 3d 1,265	(120 in. W. B.)
4-p Sport Roadster 1,975	2830 3-p Coupe 1,295	"6-51"	3420 5-p Brougham 4 d. \$2,885
4-p Club Roadster 2,075	3000 5-p Coach 1,295	2600 5-p Demi Sp. Tour. 1,220	3375 4-p Victoria 2.385
4-p Sport Brougham 2,250 5-p Sedan 2,350	2870 3-p Spec. Coupe 1,895	5-p Sp. Touring 1,420 2779 5-p Sp. Sedan 1,495	Series "A"
BARLEY "6" 6-50	3040 5-p Sedan 1,495 3190 5-p Sedan De Luxe 1,695	2779 5-p Sp. Sedan 1,495 2900 5-p Sedan 1,720	8330 2-p Playboy Road. 2,575 8340 5-p Touring 2,575
	3190 5-p Sport 1,725	2779 5-p Brougham 1,490	3340 5-p Touring 2,575 3450 3-p Friendly "3" 2,875
2750 5-p Touring \$1,395 2800 5-p Sp. Touring 1,495	2990 5-p Brougham 1,545	5-p Sp. Brougham 1,620	3625 5-p Brougham 2,875
2800 5-p Sp. Touring 1,495 8100 5-p Sedan 1,850	COLE "MASTER"	"8-80"	3520 4-p Victoria 2,775
8150 5-p Sp. Sedan 2,250	3675 4-p Volante Touring \$2,325	3700 5-p Sp. Touring 2,165	3525 5-p Sedan 2,975
BUICK "Standard"	3795 7-p West. Touring 2,325	7-p Sp. Touring 2,265	8470 7-p Sedan 8,825
2750 2-p Roadster \$1,150	3675 4-p Aero-Vol. Tour. 2,475 4055 5-p Brouette Sedan 3,225	3000 3-p Coupe 2,315 5-p Sedan 2,265	3800 7-p Suburban Sedan 3,375 KISSEL "55"
2920 5-p Touring 1,175	4000 7-p Royal Sedan 3,225		3130 2-p Speedster \$1,895
2960 2-p Coupe 1,375	4100 7-p Royal Limousine 3,325	4000 5-p Brougham 2,865	2-p Sp'dster De Luxe 2,185
8075 4-p Coupe 1,565	CUNNINGHAM	ESSEX	4-p Speedster 1,995
8185 5-p Dbl. Serv. Sedan 1,475	"V-6"	2130 5-p Touring \$850	4-p Sp'dster De Luxe 2,285
8245 5-p Sedan 1,665 8050 5-p Coach 1,295	4600 7-p Touring \$6,800	2395 5-p Coach 850	3530 2-p Enc. Speedster 2,285 2-p Enc. Sp'd'r DeL. 2,785
	4500 4-p Sp. Touring 5,800	FLINT "55"	2-p Enc. Sp'd'r DeL. 2,785 3190 4-p Tourster 1,895
"Master" (120 in. W. B.)	4700 4-p Coupe 7,150 5000 6-p Limousine 7,650	4-p Sport Roadster \$1,950	4-p Tourster De L. 2,085
3285 2-p Roadster 1,365		3145 5-p Touring 1,595	2980 5-p Phaeton 1,685
8465 5-p Touring 1,395	DAGMAR "6-70" 3750 4-p Roadster \$3,500	3310 4-p Sp. Touring 2,050	3170 5-p Phaeton De L. 1,885
8850 5-p Sedan 2,225	3800 4-p Sp. Tourer 3,500	3455 4-p Coupe 2,195 3585 5-p Sedan 2,285	7-p Touring 1,785
8560 5-p Coach 1,495	3700 4-p Phaeton 3,500	5-p Brougham 4 d. 2,735	7-p Touring De L. 1,985
(128 in. W. B.)	4200 4-p Petite Coupe 4,500	"40"	3430 4-p Coupe 2,185 4-p Coupe De Luxe 2,585
8485 8-p Sp. Roadster 1,750	4200 4-p Petite Sedan 4,500	2400 5-p Touring 1,285	3540 5-p Brougham Sedan 2,250
8550 5-p Sp. Touring 1,800 8610 7-p Touring 1,625	4500 4-p De Luxe Coupe 4,750 4700 5-p Sedan 4,700	5-p Sedan 4 d. 1,680	5-p Broug. Sed. DeL. 2,685
8745 3-p Country Club 2,075	4700 5-p Sedan 4,700 4800 7-p Sedan 4,750	2720 5-p Brougham 1,760	5-p Brougham 2 d. 1,895
8770 4-p Coupe 2,125	"6-60"	FORD	4070 7-p Sedan De Luxe \$.285
8905 5-p Brougham Sedan 2,850	3100 2-p Roadster 1,785	Without Starter and Dem. Rims 1369 2-p Runabout \$260	4010 7-p Berline Sed. DeL. 8.385 3530 5-p Victoria 2.285
4030 7-p Limousine 2,525 8995 7-p Sedan 2,425	8200 4-p Sp. Touring 1,785	1369 2-p Runabout \$260 With Balloon Tires \$05	3530 5-p Victoria 2,285 5-p Victoria De Luxe 2,685
3995 7-p Sedan 2,425 3850 7-p Town Car 2,925	3150 5-p Touring 1,985	1494 5-p Touring 290	4475**
	3400 2-p Coupe 2,345	With Balloon Tires 335	2-p Speedster 2,195
CADILLAC "V-63 Standard Line" 4190 2-p Roadster \$3,185	3500 5-p Sedan 2,345	With Starter and Dem. Rims	2-p Speedster De L. 2,480
4280 7-p Touring 3,185	DANIELS "24-38" 4150 4-p Touring \$6,800	1521 2-p Runabout 345 With Balloon Tires \$70	4-p Speedster 2,295
4200 4-p Phaeton 3,185	4765 7-p Touring 6,900	1644 5-p Touring 375	4-p Speedster De L. 2,585 2-p Speedster De L. 2,585
4240 5-p Coach 3,185	4600 4-p Sedan 7,600	With Balloon Tires 400	2-p Speedster De L. 2,000
4610 7-p Sedan 3,835 4380 4-p Victoria 3,485	5200 7-p Sedan 7,800	1749 2-p Coupe 520	4-p Tourster 2,195
4525 5-p Landau 3,835	DAVIS "90"	With Balloon Tires 545	4-p Tourster De L. 2,885
4655 7-p Std. Imperial 4,010	2650 4-p M. o'War Road. \$1,495 2915 4-p Legionaire Tour. 1,495	1882 5-p Sedan, Tudor 580 With Balloon Tires 605	5-p Phaeton 1,985 5-p Phaeton De Luxe 2,185
"Custom Built"	2915 4-p Legionaire Tour. 1,495 2750 5-p Phaeton 1,395	1927 5-p Sedan, Fordor 660	7-n Touring 2.085
(132 in.)	5-p Sedan 1,595	With Balloon Tires 685	7-p Touring De Luxe 2,285
4260 2-p Coupe 3,975	3070 5-p Sedan 1,795	FRANKLIN "11-A"	4-p Coupe 2,489
(138 in.)	3065 5-p Berline Sedan 1,995	2800 3-p Sport Roadster \$2,800	4-p Coupe De Luxe 2,885
4400 5-p Coupe 4,350 4490 5-p Sedan 4,550	2700 5-p Brougham 1,595	2845 5-p Touring 2,650	5-p Brougham Sedan 2,550
4490 5-p Sedan 4,550 4590 7-p Suburban 4,650	2835 4-p Roadster 1,795	2965 3-p Coupe 2,700 3175 5-p Sedan 3,200	5-p Broug. Sed. DeL. 2,985 5-p Brougham 2 d. 2,195
4655 7-p Imp. Suburban 4,950	3020 5-p Phaeton 1,695	3080 5-p Sport Sedan 3,350	7-p Sedan De Luxe 3,485
CASE J. I. C.	3050 5-p Brougham 1,895	3275 7-p Limousine 3,500	7-p Berl. Sed. DeL. 3,585
3260 3-p Roadster \$1,840	5-p Sedan 1,895	3135 7-p Cabriolet 4,400	7-p Victoria 2,585
3200 5-p Touring 1,885	3245 5-p Sedan 2,095 3215 5-p Berline Sedan 2,295	GARDNER "Series 5"	7-p Victoria De Luxe 2,985
3470 5-p Sp. Touring 2,160	DODGE BROTHERS	2680 5-p Coupe 1,275	LEXINGTON
3570 4-p Sub. Coupe 2,480 3640 5-p Sedan 2,590	2473 2-p Roadster \$ 855	2895 5-p Sedan 1,475 3070 5-p Sp. Sedan 1,595	"Concord" \$1,595
3650 5-p Brougham 2,590	2593 2-p Special Roadster 955	66°	
"X"	2567 5-p Touring 885	3010 5-p Touring 1,395	5-p Spec Touring 1,795
3020 3-p Roadster 1,840	2695 5-p Spec. Touring 985	3240 5-p Brougham 1,595	5-p Sedan 2,189
8050 5-p Touring 1,595	2708 2-p Coupe "B" 995 2828 2-p Spec. Coupe "B" 1,095	3310 5-p Sedan 1,795	5-p Spec, Sedan 2,440
3380 5-p Sub. Coupe 2,290	2995 5-p "B" Sedan 1,095	5-p Sport Sedan 1,895	"Minute Man" 2-p Roadster 2.145
3380 5-p Victoria 2,290 3400 5-p Sedan 2,385	3077 5-p Spec. "B" Sedan 1,195	"8"	5-p Touring 2,095
3400 5-p Sedan 2,385	8020 5-n Soden A 1 245	3350 5-p Touring 1,995	7-p Touring 2,195
8950 7-p Touring 2,225	3107 5-p Spec. "A" Sedan 1,330	3510 5-p Brougham 1,995 3600 5-p Sedan 2,495	5-p Lark Touring 2,345
4320 7-p Sedan 2,975	2723 5-p Coach 1,095 2823 5-p Spec. Coach 1,195		5-p Cal. Touring 2,495 7-p Cal. Touring 2,495
CHANDLER "SS"	2823 5-p Spec. Coach 1,195 DORRIS "6-80"	GRAY "O" 1750 5-p Touring \$630	7-p Cal. Touring 2,495
3090 2-p Roadster \$1,795	4120 4-p Pasadena Tour. \$4,150	1880 3-p Coupe 845	5-p Brougham 2,595
8182 4-p Roadster 1,785	4115 7-p Touring 4.150	2020 5-p Sedan 895	5-p Sedan 2,895
3084 5-p Touring 1,595	4193 4-p Coupe 4,985	2130 5-p Royal Sedan 975	LINCOLN
8928 7-p Touring 1,785 8248 4-p Royal Dispatch 1,885	4200 5-p Sedan 5,550	HAYNES "60"	4380 2-p Roadster \$4,000
Janu 1-p Royal Dispaten 1,885	4310 7-p Sedan 5,800	3295 5-p Touring 1,600	4595 7-p Touring 4,000

Prices and Weights of Current Passenger Car Models

SHIP. WT. PASS. BODY STYLE. PRICE			
	SHIP.	SHIP.	SHIP.
	WT. PASS. BODY STYLE. PRICE	WT. PASS. BODY STYLE, PRICE	WT. PASS. BODY STYLE, PRICE
LINCOLN (Con'd)	"Advanced"	PIERCE-ARROW (Con'd)	STEVENS-DURYEA
4,000 Appendix Append	(127 in. W. B.) 3480 7-p Touring 1,525	3385 7-p Phaeton 2,895 3365 4-p Coupe Landau 3,820	4200 2-p Roadster \$8,150 4400 7-p Touring 7,500
4655 4-p Coupe 4,600	3640 4-p Victoria 2,090	3335 4-p Coupe 3,695	4400 7-p Touring 7,500 4250 4-p Sp. Touring 7,750
4775 4-p Sedan 4,800	3750 5-p Coupe 4 d. 2,190	3440 5-p Sedan 3,895	4600 4-p Coupe 9,000
4825 5-p Sedan 4,900	3830 7-p Sedan 2,290	3560 7-p Sedan 3,995	4600 4-p Sedan 10,000
4865 7-p Sedan 5,100	OAKLAND "6-54"	3615 7-p Enc. Drive Lim. 4,045	4800 6-p Sedan 9,675
4945 7-p Limousine 5,300	2420 3-p Roadster \$1,095	REO "T-6" 3350 3-p Sp. Roadster \$1.765	4800 6-p Town Brougham 10,175
LOCOMOBILE "48"	2510 3-p Sp. Roadster 1,195	3350 3-p Sp. Roadster \$1,765 3182 5-p Sp. Touring 1,595	4800 6-p Vestibule Limou. 9,675 4800 7-p Vestibule Limou. 10,175
5280 4-p Sportif Tour. \$7,460	2485 5-p Touring 1,095 2550 5-p Sp. Touring 1,195	2-p Coupe 1,645	4800 7-p VestibuleLimou. 10,175 4800 7-p 4 Limousine 10,175
5330 7-p Touring 7,460	2620 5-p Coach 1,215	3450 4-p Coupe 1,975	4800 7-p Cabriolet 10,175
5630 5-p Victoria Sedan 10,050 5464 7-p Brougham 10,040	2620 3-p Landau Coupe 1,295	3400 5-p Sedan 4 d. 1,645	STUDEBAKER
5464 7-p Brougham 10,040 5640 7-p Touring Lim. 9,500	2720 4-p Coupe 1,495	3545 5-p Sedan 2,085	
5868 7-p Encl. Drive Lim. 10,050	2700 5-p Sp. Sedan 1,375	3705 5-p Brougham 4 d. 2,235	Standard Six 2760 3-p Du. Roadster \$1,125
5600 7-p Cabriolet 10,300	2860 5-p Sedan 1,545	REVERE "25"	2870 5-p Du. Phaeton 1,145
"J-8"	2885 5-p Landau Sedan 1,645	3900 2-p Sp. Roadster \$2,750	2945 3-p Country Club 1,345
2-n Pondston 9 150	OLDSMOBILE "30"	3975 4-p Speedster 2,750 4050 5-p Touring 2,750	2980 5-p Coach 1,295
5-p Touring 1,785	2145 2-p Roadster \$ 890	4050 5-p Touring 2,750 4300 5-p Sedan 3,800	3175 5-p Brougham 1,465
5-p Sedan 2,285	2270 2-p Sp. Roadster 985 2200 5-p Touring 890	"M"	3260 5-p Sedan 1,595
5-p Brougham 2,285	2360 5-p Sp. Touring 1,015	3700 2-p Roadster 3,200	3280 5-p Berline 1,650
McFARLAN "6"	2330 2-p Bus. Coupe 1,045	3800 4-p Sportster 3,200	Special Six
"SV"	2460 4-p Coupe 1,175	3970 5-p Touring 3,200	3400 4-p Du. Roadster 1,495
3700 2-p Roadster \$2,650	2410 5-p Coach 1,075	4400 5-p Sedan 4,000	3480 4-p Sp. Roadster 1,645
2-p Spec. Roadster 2,900	5-p DeLuxe Coach 1,150	RICKENBACKER	3475 5-p Du. Phaeton 1,495
3600 5-p Touring 2,650	2570 5-p Sedan 1,285 2740 5-p DeLuxe Sedan 1,375	D	3605 4-p Club Coupe 1,695 3675 4-p Victoria 1.895
7-p Touring 2,750		2864 4-p Sp. Roadster \$1,595	3675 4-p Victoria 1,895 3785 5-p Brougham 1,795
4-p Coupe 3,180	OVERLAND "91" 4 (100 in, W. B.)	2787 5-p Sp. Touring 1,395	3545 5-p Coach 1,595
3850 5-p Sedan 3,180	1919 5-p Touring \$495	3040 4-p Coupe 1,895	3885 5-p Sedan 2,045
5-p Spec. Sedan 3,180	2-p Coupe 635	3027 5-p Coach Brough. 1,595	3890 5-p Berline 2,120
3850 7-p Sedan 3,280 5-p Sub. Sedan 3,380	2205 5-p Sedan De Luxe 715	3143 5-p Sedan 1,995	Big Six
7-p Sub. Sedan 3,380	2202 5-p Std. Sedan 655	"A"	3785 7-p Du. Phaeton \$1,875
5-p Brougham 3,180	"93" 6	3326 4-p Sport Phaeton \$2,195	4030 5-p Coupe 2,450
"TV"	(112¾ in. W. B.)	3440 4-p Coupe 2,695 3585 5-p Sedan 2,795	4095 5-p Brougham 4 d. 2,575
4000 2-p Roadster \$5,400	2443 5-p Sta. Sedan 985	3585 5-p Sedan 2,795 3485 5-p Coach Brough. 2,395	4150 7-p Sedan 2,575
4600 4-p Sp. Touring 5,600	2584 5-p Sedan De Luxe 1,150	ROAMER "6-54-E"	4200 7-p Berline 2,650
4900 4-p Coupe 6,720	PACKARD "6"		STUTZ "6-94"
5200 4-p Tour. Sedan 6,720	(126 in. W. B.)	(118 in. W. B.) 3100 2-p Roadster \$2.685	3492 2-p Roadster \$2,395
5200 7-p Tour. Sedan 6,810	3643 4-p Roadster \$2,785 3653 5-p Touring 2,585	3100 2-p Roadster \$2,685 3100 4-p Tourer 2,485	3640 5-p Touring 2,395
	3653 5-p Touring 2,585 3595 4-p Sp. Touring 2,750	3300 4-p Sp. Touring 2,750	3940 4-p Coupe 3.050
7-p Spec. Sedan 6,810	3753 4-p Coupe 2,585	7-p Touring 2,685	3926 5-p Sedan 3.050
7-p Enc. Sedan 7,110	3876 5-p Coupe 2,685	3-p Cabriolet 3,285	"6-95"
7-p Sub. Sedan 7,110	3937 5-p Sedan 2,585	(138 in. W. B.)	4064 5-p Sportster 3,085
5200 7-p Town Car 9,000	3974 5-p Sedan Limousine 2,885	4100 5-p Spec. Sedan \$4,250	4152 7-p Tourster 3,070
MARMON "74"	(133 in. W. B.) 3793 7-p Touring 2,785	4200 7-p Suburban Sedan 3,950	4305 5-p Sportbrohm 3,785 4622 7-p Suburban 3,935
3695 2-p Roadster \$3,165	3793 7-p Touring 2,785 4043 7-p Sedan 2,785	"4-75-E"	4622 7-p Suburban 3,935 4675 7-p Berline 4,035
3604 5-p Phaeton 3,165	4143 7-p Sedan Limousine 2,885	3600 4-p Sport \$3,650 3200 2-p Spec. Speedster 3,785	VELIE "60"
3704 7-p Touring 3,165	44919		
3604 5-p Club Phaeton 3,465	(136 in. W. B.)	ROLLIN	3030 4-p Sp. Roadster \$1,650
3704 7-p Club Touring 3,465	4060 4-p Runabout 3,950	2360 5-p Touring \$1,155 2405 3-p Coupe 1,325	2840 5-p Touring 1,275 3025 5-p Club Phaeton 1,425
3799 5-p Brougham Coupe 3,295 3729 3-p Coupe De Luxe 3,455	4090 5-p Touring 3,750	2595 5-p Brougham 1,325	3025 5-p Club Phaeton 1,425 3150 4-p Coupe 1,825
\$729	4023 4-p Sp. Touring 3,900	2575 5-p Sedan 1,455	3340 5-p Royal Sedan 1,925
3859 5-p Sedan de Luxe 3,775	4242 4-p Coupe 4,650	ROLLS-ROYCE	3083 5-p Coach 2d. 1,425
3999 7-p Sedan 3,370	4337 5-p Coupe 4,825	Chassis ††	3005 5-p Coach 4d. 1,450
3974 7-p Sedan de Luxe 3,850	4528 5-p Sedan 4,750 4535 5-p Sedan Limousine 4,850		WESTCOTT "44"
3969 5-p Sedan Limousine 3,900	4535 5-p Sedan Limousine 4,850 (143 in. W. B.)	††Manufacturers do not quote list	3150 5-p Spec. Touring \$1,970
3999 7-p Sedan Limousine 3,975	4199 7-p Touring 3,950	prices.	3300 4-p Brougham 3d. 2,320
MAXWELL "25"	4655 7-p Sedan 5,000	STANLEY "252"	**60**
2130 2-p Roadster \$885	4710 7-p Sedan Limousine 5,100	3400 5-p Phaeton \$2,500	3300 5-p Sedan \$2,325
2210 5-p Touring 895	PAIGE "21-24"		
2255 2-p Club Coupe 995	3875 4-p Phaeton \$2,165	3800 5-p Sedan 3,300	WILLS SAINTE CLAIRE
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165	STAR	WILLS SAINTE CLAIRE "B-68" (127 in. W. B.)
2440 5-p Club Sedan 1,045 2580 5-p Std. Sedan 1,095	3935 7-p Phaeton 2,165 3975 5-p Brougham 2,195	STAR 1725 2-p Roadster 3540	"B-68" (127 in. W. B.)
2440 5-p Club Sedan 1,045 2580 5-p Std. Sedan 1,095 2595 5-p Spec. Sedan 1,245	3935 7-p Phaeton 2,165 3975 5-p Brougham 2,195 4050 5-p Broug. De Luxe 2,395	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625	"B-68" (127 in. W. B.) 3265 4-p Roadster \$2,985 3335 5-p Traveler 3.085
2440 5-p Club Sedan 1,045 2580 5-p Std. Sedan 1,095 5-p Spec. Sedan 1,245 MERCER "6"	3935 7-p Phaeton 2,165	STAR 1725 2-p Roadster \$540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715	"B-68" (127 in. W. B.) 3265 4-p Roadster \$2,985 3335 5-p Traveler 3,085 3500 7-p Phaeton 2,885
2440 5-p Club Sedan 1,045 2580 5-p Std. Sedan 1,095 2595 5-p Spec. Sedan 1,245 MERCER "6" \$4,500	3935 7-p Phaeton 2,165 3975 5-p Brougham 2,195 4050 5-p Broug. De Luxe 2,395 4325 7-p Sedan De Luxe 2,840 4370 7-p Sub. Limousine 2,965	STAR 1725 2-p Roadster 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045 2580 5-p Std. Sedan 1,095 2595 5-p Spec. Sedan 1,245 MERCER "6" 3860 3-p Runabout \$4,500 3950 6-p Touring 4,500	3935 7-p Phaeton 2,165	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820	"B-68" (127 in. W. B.) 3265 4-p Roadster \$2,985 3335 5-p Traveler 3,085 3500 7-p Phaeton 2,885 3495 4-p Coupe 3,785 3625 5-p Sedan 3,885
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165 3975 5-p Brougham 2,195 4050 5-p Broug. De Luxe 2,395 4325 7-p Sedan De Luxe 2,840 4370 7-p Sub. Limousine 2,965 PEERLESS "6-72" (126 in. W. B.) 3175 5-p Touring 1,895	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165 3975 5-p Brougham 2,195 4050 5-p Broug. De Luxe 2,395 4325 7-p Sedan De Luxe 2,840 4370 7-p Sub. Limousine 2,965 PEERLESS "6-72" (126 in. W. B.) 3175 5-p Touring 1,895 3525 5-p Coupe 2,495	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT "B" (4)	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165 3975 5-p Brougham 2,195 4050 5-p Broug. De Luxe 2,855 4325 7-p Sedan De Luxe 2,840 4370 7-p Sub. Limousine 2,965 PEERLESS "6-72" (126 in. W. B.) 3175 5-p Touring 1,895 3525 5-p Coupe 2,495 3550 5-p Sedan 2,565	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT "B" (4) 4-p Coupe Roadster \$1,795	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165 3975 5-p Brougham 2,195 4050 5-p Broug. De Luxe 2,395 4325 7-p Sedan De Luxe 2,840 4370 7-p Sub. Limousine 2,965 PEERLESS "6-72" (126 in. W. B.) 3175 5-p Touring 1,395 3525 5-p Coupe 2,495 3550 5-p Sedan (133 in. W. B.)	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupster 625 1915 2-p Coupster 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165 3975 5-p Brougham 2,195 4050 5-p Broug. De Luxe 2,395 4325 7-p Sedan De Luxe 2,840 4370 7-p Sub. Limousine 2,965 PEERLESS "6-72" (126 in. W. B.) 3175 5-p Touring 1,995 3525 5-p Sedan 2,565 (133 in. W. B.) 3350 7-p Touring 1,995	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT "B" (4)	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165 3975 5-p Phaeton 2,195 4050 5-p Prough 2 4050 4370 7-p Sedan De Luxe 2,840 4370 7-p Sub. Limousine 2,965 PEERLESS "6-72"	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1806 2-p Coupster 625 1915 2-p Coupster 625 1915 2-p Coupster 625 1915 2-p Coupster 625 1915 2-p Coupster 715 2090 5-p Sedan 2 d. 820 STEARNS-KNIGHT	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1806 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT "B" (4) 4-p Coupe Roadster \$1,795 3775 5-p Touring 1,595 4250 5-p Sedan 2,095 3750 4-p Coupe Brougham 1,895 3750 4-p Coupe Brougham 2,095 "S" (6) 350	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165	STAR 1725 2-p Roadster \$540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT "B" (4) 4-p Coupe Roadster \$1,795 3775 5-p Touring 1,595 4250 5-p Sedan 2,095 3750 4-p Coupe Brougham 2,095 3750 4-p Coupe Brougham 2,095 3750 4-p Coupe Brougham 2,095 3750 4-p Coupe 3750 3	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1806 2-p Coupster 625 1915 2-p Coupster 625 2-p Coupster 1,795 2,995 2-p Coupster 1,895 2-p Coupster 2,995 2-p Coupster 2,495 2-p Roadster 2,495 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,395 2,495 2,395 2,395 2,395 2,395 2,395 2,495 2,39	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1806 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p Phaeton 2,165	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1806 2-p Coupster 625 1915 2-p Coupster 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p	STAR 1725 2-p Roadster \$540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT "B" (4) 4-p Coupe Roadster \$1,795 4775 5-p Touring 1,595 4250 5-p Sedan 2,095 3750 4-p Coupe Brougham 1,895 Brougham 2,095 3750 4-p Coupe Brougham 3,395 3850 7-p Touring 2,495 4025 2-p Coupe 3,395 4275 4-p Sp. Coupe 3,395 4275 4-p Sp. Coupe 3,150 3950 5-p Sedan 2,945 2,945 4275 4-p Sp. Coupe 3,150 3950 5-p Sedan 2,945 4025 4025 402	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 2 d. 820 STEARNS-KNIGHT "B" (4) 4-p Coupe Roadster \$1,795 4250 5-p Sedan 2,095 4250 5-p Sedan 2,095 3750 4-p Coupe Brougham 2,095 3750 4-p Coupe Brougham 2,095 3750 5-p Roadster \$2,495 3775 5-p Touring 2,395 3850 7-p Touring 2,395 4275 2-p Coupe 3,395 4275 4-p Sp. Coupe 3,395 4275 7-p Sp. Brougham 2,945 3950 5-p Sedan 2,945 3950 5-p Sedan 2,945 3950 5-p Sedan 2,945 3950 5-p Sedan 2,945 3250	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1806 2-p Coupster 625 1915 2-p Coupster 625 1915 2-p Coupster 625 1915 2-p Coupster 625 1915 2-p Sedan 2 d. 750 2155 5-p Sedan 2 d. 820 STEARNS-KNIGHT	"B-68" (127 in. W. B.) 3265 4-p Roadster 3,085 3500 7-p Phaeton 2,885 3495 4-p Coupe 3,785 3625 5-p Sedan 3,895 3625 5-p Sedan 3,900 3710 7-p Limousine 4,085
2440 5-p Club Sedan 1,045	3935 7-p	STAR 1725 2-p Roadster \$540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 2 d. 820 STEARNS-KNIGHT "B" (4) 4-p Coupe Roadster \$1,795 3775 5-p Touring 1,595 4250 5-p Sedan 2,095 3750 4-p Coupe Brougham 1,895 2,995 3775 4-p Spougham 2,395 3850 7-p Touring 2,495 3775 5-p Touring 2,495 3775 4-p Spougham 2,395 4275 4-p Spougham 2,495 4275 4-p Spougham 2,945 4275 4-p Spougham 3,395 4-p Sedan 4-p Sedan 3,395 4-p Sedan 3,395 4-p Sedan 4-p Sedan 3,395 4-p Sedan	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p	STAR 1725 2-p Roadster 3540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT "B" (4) 4-p Coupe Roadster 1,595 4250 5-p Touring 2,095 4250 5-p Sedan 2,095 3750 4-p Coupe Brougham 2,095 3750 4-p Coupe Brougham 2,095 3750 4-p Coupe 3,295 3850 7-p Touring 2,395 3850 7-p Touring 2,495 4025 2-p Coupe 3,395 4025 2-p Coupe 3,395 4275 4-p Sp. Brougham 3,395 3950 5-p Sedan 2,945 4275 7-p Sp. Brougham 3,395 3,395 4-p Touring 3,395 3,395 4-p Touring 3,395 3,395 4-p Touring 31,875 3525 4-p Touring 31,875 32525 32525 32525 32525	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p	STAR	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p	STAR	"B-68" (127 in. W. B.) 3265 4-p Roadster 3,085 3500 7-p Phaeton 2,885 3495 4-p Coupe 3,785 3625 5-p Sedan 3,885 3635 7-p Sedan 3,900 3710 7-p Limousine 4,085
2440 5-p Club Sedan 1,045	3935 7-p	STAR 1725 2-p Roadster 540 1805 5-p Touring 540 1860 2-p Coupster 625 1915 2-p Coupe 715 2090 5-p Sedan 2 d. 750 2155 5-p Sedan 4 d. 820 STEARNS-KNIGHT "B" (4) 4-p Coupe Roadster \$1,795 4250 5-p Sedan 2 d. 750 24250 5-p Sedan 2 d. 2,995 4250 5-p Sedan 1,895 2,095 3750 4-p Coupe Brougham 2,995 3755 5-p Touring 2,395 3775 5-p Touring 2,395 3850 7-p Touring 2,495 4025 2-p Coupe 3,395 4275 4-p Sp. Coupe 3,150 3950 5-p Sedan 3,395 4275 4-p Sp. Brougham 3,395 4-p Sedan 3,395	"B-68" (127 in. W. B.) 3265
2440 5-p Club Sedan 1,045	3935 7-p	STAR 1725	"B-68" (127 in. W. B.) 3265
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2440 5-p Club Sedan 1,045	3935 7-p	STAR	"B-68" (127 in. W. B.) 3265

Mechanical Specifications of Current Passenger Car Models

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	ABBREVIATIONS— NAMES OF MFRS. OF PARTS	A-K—Atwater Kent A-L—Auto-Lite Ada—Adams Al—Alemite Ans—Ansted	B.L.—Brown-lipe Bal.—Ball & Bal. Bal.—Ball & Ball Bij.—Bilu Bij.—Bilu Bij.—Bilu Bowen Products	CAS—CAS Products	Con—Continental Conn—Continental Col—Columbia Col—Campbell Delo—Delon	Dit—Ditweiler	Due-Dot Due-Duesenberg Dur-Durston Dyn-Dyneto Ext-Eston	: Z 3 2 4 4 4 2 1 5 .		EN ENZYA	Sare incatora Sare Salisbury Salisbury Schener Schener Schener Stephen Stephen Spirit Stephen Sp	The—Thermoid Thi—Thiemer Til—Tillotson Tim—Timken	Uni—Universal W.G.—Warner Gear W.s.—Wagner Was—Warner W.s.—Westinghouse W.s.—Westinghouse W.s.—Zenk Zen—Zenk
	Type and Make	₹ : : : :	Pr-Ze.	Pr-Al.	Pr-Sa. Pr-Sa. Pr-Ze. Pr-Ze.	Pr-Ze.	Cm·Bo Cm·Bo Pr-Al	Pr-Do. Pr-Do.		Pr-Al. OW. Pr-Ze. Cu.	Pr-Ze. Pr-Al. Oc Pr-Al. Ow Pr-Al. Pr-Al.	Pr-Al.	
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You may be Losing

More and more motor car dealers are coming to see the truth of the statement that—other things being equal—the number of sales is in direct proportion to the number of contacts. Into the sales situation created by this fact, Lockheed Hydraulic Four-Wheel Brakes enter with an ever increasing effect.

For it is obvious that once a car owner becomes accustomed to the superb performance of hydraulic brakes, he will not even consider buying a car with lesser braking efficiency.

In other words, the dealer for the car equipped with ordinary four-wheel or two-wheel brakes—from the very fact that his car is equipped with such brakes—cannot maintain effective sales contact with car owners who otherwise might be the very hottest kind of prospects.

By the end of the year 1925, 400,000 cars will be in service equipped with Lockheed Hydraulic Four-Wheel Brakes. These owners might as well be removed forever from the prospect lists of the dealer whose car is not equipped with Lockheed hydraulics.

On the other hand, the dealer who is selling a Lockheed equipped job has all the advantages. He can compete with other hydraulic brake equipped cars—and in Lockheed Hydraulic Four-Wheel Brakes, of which there have been 40 adoptions, he has a most powerful sales argument which the dealer whose car is equipped with mechanical brakes, utterly lacks.

HYDRAULIC BRAKE COMPANY
5835 Russell Street Detroit, Michigan

The Answer

LOCKHEED HYDRAULIC

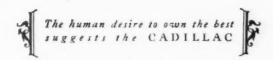
Four Wheel Brakes

Mechanical Specifications of Current Passenger Car Models—Continued

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There is a greater cumulative experience in eight-cylinder construction in the Cadillac organization than in all other automobile factories combined. The fine car buying public knows that—and every dealer knows to whom the large majority of this public is going for eight-cylinder automobiles.

CADILLAC MOTOR CAR COMPANY, DETROIT, MICH.

CADILLAC





Change the Whole Autographic Register Field

Business men who never could see the advantages of registers before are now successfully using WIZ with its flatpakit forms. Put WIZ alongside any other Autographic register. Compare every detail. Put them through their paces. Find out for yourself which is most efficient. We want you to be the judge. We want you to see with your own eyes that WIZ is the only register with the following exclusive features:

- 1. WIZ USES ONLY ONE FLAT-PAKIT INSTEAD OF SEVERAL TO MAKE ANY RE-QUIRED NUMBER OF DUPLI-
- Wiz issues all copies or refolds one in a zig-zag pack. This checking copy accounts for every item for instant reference, posting, checking, auditing and
- 3. Wiz "flatpakit" forms always lie flat and file flat.
- 4. All these are combined automatically in the Wiz Register with "FLATPAKIT" forms.

Let us tell you more about Wiz Registers —how they can help you keep the record of each transaction more accurately and thus save you money.



The Wiz Register is one of the Amsaboco Products made by American Sales Book Company, Ltd., the largest and oldest manufacturer of sales check books, autographic registers and other original entry systems. Its president is the founder of the industry and it has more trained field representatives than any other concern.

@ A. S. B. Co.

American Sales Book Company, Limited Dept. 7286, Elmira, N. Y.

Please give me information about Wiz Flatpakit systems as checked below.

- Protected Cash Sales
- Customer's Credit Sales
- Combining Two Ideas in One Set of Forms
- ☐ Simple Delivery Records
- ☐ A Receiving System that Works
- Less Work and Quicker Collections with this Statement System
- A System for ..

(Pin to your letterhead and mail)



BALLOON BUMPERS

Magnify Beauty of Today's Car Designs

Balloon Bumpers

Front or Rear

\$25.00

TNTIL a year ago when Balloons were introduced all bumpers were out of date. Rapid strides and revolutionary changes in car design are antiquating former types. Balloon Bumpers, safe, sturdy, and correct, are the only models that kept pace with this development.

Gruelling tests—134808 terrific crashes by a five-ton plunger in the presence of thousands of spectators during the National Automobile Shows-proved their endurance-solidity and

Balloonettes

For the Rear

\$30.00

grace united bespeak their beauty-and the ever-increasing thousands on boulevards proclaim their popularity.

Everyone can make and sell bumpers in today's price-cutting market-reputations are in danger -but Balloon Bumpers create and maintain their own steady market. Live dealers will wire us immediately for protection and profits.

We have a special proposition for automobile distributors. Write for details.

Automobile Equipment Manufacturing Corporation

Corporate Successors to American Automotive Manufacturing Co.

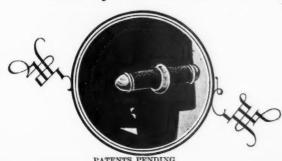
1908-1910-1912 Indiana Ave., Chicago, Ill.

Designers and manufacturers of Balloon Bumpers

Tel. Cal. 6670-71

Balloonettes-for the rear or full rear Bumper. REG. U. S. PAT. OFF.





Valve Knowledge Pays Dividends

We'll guarantee that if you once begin to talk valves to car owners, you'll keep it up.

Tell a man why it doesn't pay to regrind old, wornout or burned valves, and he's interested—always.

Tell him about a set of valves that will last four times as long as others, require less regrinding and give him practically a new engine—and you sell him materials at a good profit instead of labor at a narrow margin.

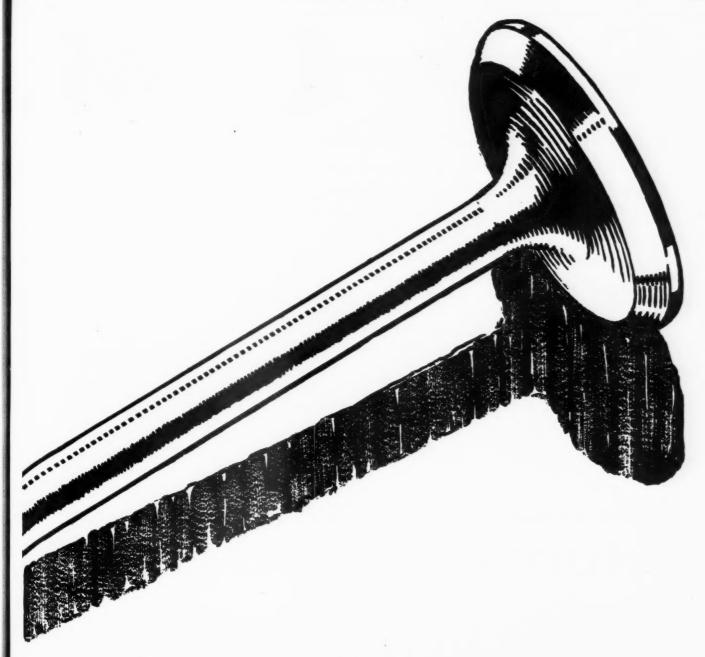
It pays, also, because it's better service. It's the right thing to do, it makes friends, and builds business.

We have a little folder, "What do you know about Valves," that is full of information of value to any garage proprietor. Ask your jobber for a copy.

THOMPSON PRODUCTS, INC., CLEVELAND

Also Manufacturers of King Bolts, Tie-Rod Bolts, Spring Bolts, Bushings, Tappets, and Starting Cranks EXPORT DEPARTMENT: 130 West 42d St., New York, U. S. A. Cable Address: "THOMPRO—NEW YORK"





Thompson Silcrome Valves

S. P. C. M.

Prevention of Cruelty to Motors
ALL MOTORS, BORN

ALL MOTORS, BORN IN THE UNITED STATES, DIE WITHIN THREE YEARS OF NIA PNEUMONIA CAUSED BY EXCESSIVE WATER COOLING

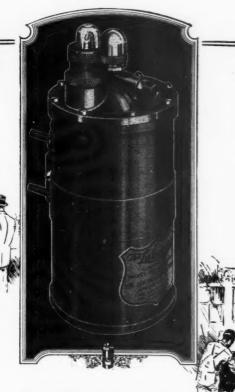


The old fashioned engineer still insists on water cooling He will not see that

Cooling by Evaporation is Nature's Method



RUSHMORE LABORATORY-Plainfield-NewJettsey.



The Luburetor is a vacuumcontrolled device which introduces a fresh supply of high grade oil into the combustion chamber with each intake stroke. Feed is controlled and regulated by a sturdy piston valve which supplies just the right amount of lubricant needed through the intake manifold. Operation is entirely automatic.

Yes! the carowner needs and wants it!

FOUR years of cautious marketing, scientific study and actual use stand behind the Luburetor as it is today. From these four years of experience we can answer with authority when dealers ask, "Will It Sell?"

The Luburetor WILL sell — IS selling now in all parts of the country. This is why:

- 1. The Luburetor is a basic improvement in motor lubrication, providing specific lubrication to the danger zone of all motors the upper end.
- The Luburetor is universal in application, fitting passenger cars, trucks or tractors, and performing equally valuable functions on new motors and old ones alike.
- 3. The Luburetor is positive in its action, resulting in uniformly smoother motor operation as a result of fundamentally improved lubrication.

In short, if a positive means of increasing power, improving motor efficiency and reducing maintenance cost can be sold—if there is a market for an instrument that makes a better motor of any motor on which it is installed—the Luburetor will sell. For these things, in a nut shell, are what the Luburetor accomplishes.

THE LUBURETOR COMPANY
471 EAST BROAD STREET, COLUMBUS, OHIO

The Suburetor

Totals

Cotton details

Cotton

THE LUBURETOR COMPANY,

COLUMBUS, OHIO

Please send me by return mail full description, prices and discounts on the Luburetor.

Signed-

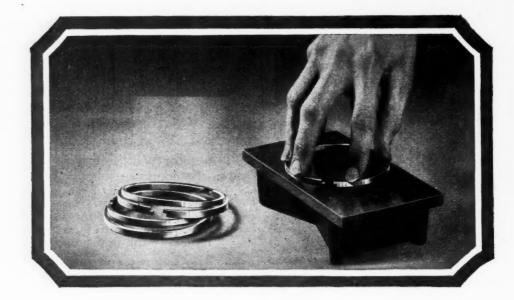
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City_

State

MA -6

McQUAY-NORRIS PISTON RINGS



Free from snakiness!

McQuay-Norris piston rings are free from snakiness. To prove it, try them on a face plate coated with Prussian blue. You'll find them flat—not snaky.

This flatness means perfect side-fit in true ring grooves. Snaky rings can't fit the grooves perfectly.

Piston ring side-fit in the groves is as important as the cylinder fit. You get it in all McQuay-Norris piston rings. The electric iron from which they are made helps make this flatness possible.

The same accuracy can be found in all McQuay-Norris products—piston rings, pistons, pins and bearings.

Remember

The best profits are in the best parts. Poor replacement parts can ruin a good mechanical job.

The Complete McQUAY-NORRIS parts line PISTON RINGS-PISTONS-PINS-BEARINGS

McQUAY-NORRIS MANUFACTURING COMPANY. General Offices: ST. LOUIS, U. S. A. Factories: St. Louis, Indianapolis, Connersville, Ind.; Toronto, Canada





Accessory dealers, garages and service stations can boost their sales of profitable car equipment by having the facilities for quick installation at a reasonable cost.

No other tool is so indispensable and offers such big money making opportunities on these installations as the Electric Drill. Nearly all the big turnover and large profit accessories call for drilling in their installations.

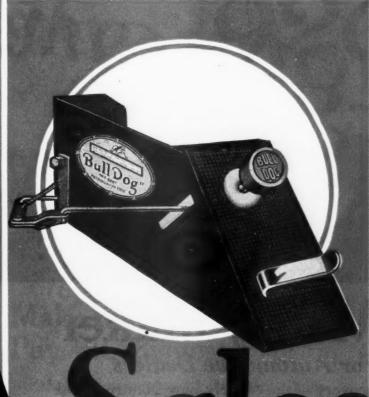
An Electric Drill will net a plus profit on your sale of bumpers, spotlights and lamps of all kinds, visors, and windshield wipers, mirrors and windshield wings, radiator shutters, car heaters, snubbers and shock absorbers. Cigar lighters, dash clocks and locking devices. Foot pedal pads, robe rails, horns and tool boxes, vacuum tanks, motor meters and dozens of other popular accessories.

THE JACOBS MANUFACTURING COMPANY

HARTFORD, CONN., U. S. A.

The World's Largest Producers of Drill Chucks





The BULL Dog Counter Merchandizer is a proven seller of Accelerators. For the first time the Ford Owner sees in actual operation the whole BULL Dog Assembly. He can't resist pressing the pedal—and instantly knows that his Ford will be easier to handle and drive if equipped with a BULL Dog Foot Accelerator.

Salesman

whose services you can have



Dealers report astonishing increases in their BULL Dog Sales, with the aid of this counter Merchandizer. You can have the use of one FREE. Ask your Jobber's salesman for details.

A New Bull Dog "Year 'round" seller—the Three-in-One Carburetor Control for Fords. In summer a gas saver every Ford Owner wants. In winter a primer to make starting easy. The Primer stays put until engine is thoroughly warmed up. Leading jobbers will supply you with these controls. They sell for \$1.50.

The W. H. Thomas
Manufacturing
Company
SPENCER, IOWA

Announcing



A Money Maker

For Automotive Dealers

The discovery of the entirely new Neutrowound principle—at our laboratory in Chicago—created a sensation among Radio Engineers, and has revolutionized Radio practice.

This new principle—incorporated exclusively in the Neutrowound Radio Receiving Set—makes it possible to obtain perfect reproduction of voice or music, without howls, noises or distortion.

Comparative tests, at our laboratory in Chicago, demonstrated that the Neutrowound brought in distant stations—with concert volume and perfect reproduction—that could not be reached by other receiving sets which cost several times as much. For many months—distant stations have been tuned in—right through the 14 powerful Chicago Stations—without any interference, and with entire freedom from the usual howls and squeals.

10,000 Sets Sold in One Week

The best evidence of the great popularity and superiority of the Neutrowound Radio Receiving Set, is the fact that in **One Week**—we received orders for over 10,000 sets from leading Automotive Jobbers and Automotive Dealers, who are exclusive Neutrowound Distributors. Neutrowound is a "money maker" for Automotive Dealers.

JOBBERS-Write Quick for Distributors' Proposition

NEUTROWOUND RADIO MFG. CO.

(Radio Division: Advance Automobile Accessories Corporation)
1721 Prairie Ave., Dept. 626, Chicago, Ill.

A.YEAR.IN

The 1926 Model SUPER-SIX Meutrowound

REG. U.S. PAT. OFF.

Make the "Dull" Months Pay the Biggest Profits

Perhaps you are one of the many Automotive Dealers whose profits are good during six months of the year—and very unsatisfactory during the other six months. Thousands of Automotive Dealers are in that position. Their expenses and overhead run right on every month—but their profits drop off, during the dull months.

You can, not only even up your profits for the year, by becoming a Distributor of the Neutrowound Radio Receiving Set—but can increase your profits—and make more money.

The Neutrowound Radio Receiving Set is made in but one model—a precision instrument of the finest quality, handsomely finished in crystalline black and nickel. In this one model is contained all the "Radio" that it is possible to buy—at any price.

Our circulars give detailed description of the new Neutrowound principle—the Neutrostat—the Neutrowound Straight-Line Frequency-Variable Condensers—Audio Frequency Amplifiers, and other improvements—perfected in our laboratory—which make the Neutrowound the greatest advance that has ever been made in Radio Receiving Sets.

Mail Coupon Now

for complete information, specifications, dealers' discounts and Neutrowound Sales Plan.

Concert Volume on Distant Stations with Extreme Selectivity

\$8500

Without Tubes, Batteries, Etc. In Canada, \$115

Only One Model Easy to Sell

Dealers Coupon

NEUTROWOUND RADIO MFG. CO. 1721 Prairie Ave., Dept. 626, Chicago, Ill. Send complete information, Dealers' Discounts and Neutrowound Sales Plan.

Name....

City

State....

ADVANCE



While you've got'em buying gas sell'em OIL too

Careful investigation shows that the average filling station sells oil to only one gasoline customer out of every four.

You can do a heap better than this, if you will put our Fig. 68 outfit on your curb. It's good looking and will attract the motorist's eye. But, better than that, it's accurate. There is no waste, and when you sell a quart, that's all the pump will serve—you don't have to beat yourself to make the measure look full.

With just a little effort you can sell oil to more than two-thirds of the folks who now buy gas from you. Others have done it, and if you want to know how we will be glad to send you our book, "How To Sell More Gas and Oil," and help you build up oil trade the way it should be built up.



For quick reply and a free booklet, address Dept. 14.

S.F. Bowser & Company, Inc.

FORT WAYNE, INDIANA.

Sales and Service Offices and Representatives Everywhere



Special Drive

on

Genuine Apex Innerings

Jobbers throughout the country are co-operating with us on this special drive. Get your supply now. Buy them by the gross, you get a better discount.

Ask your jobber salesman or write us-we'll give you the details.

Genuine Apex Innerings are everywhere in demand. Just a few dollars puts any motor in good condition—stop piston slap and oil pumping and save the expense and delay of reboring. An Apex equipped job means a satisfied customer and a mighty good profit for dealers.

Don't forget to ask your jobber salesman about Genuine Apex Innerings—it's well worth your while.

Thomson Manufacturing Co., Peoria, Ill.

Dept. C

"If it isn't an APEX—it isn't an Innering"

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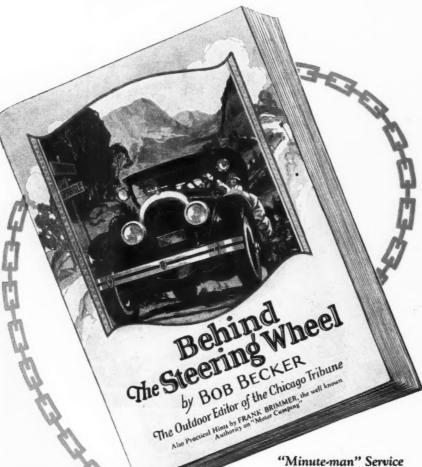
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More Business Builders



for the Dealer-

One place to look for new stockon Ten Products-the Stewart-Warner Service Station near you. These Service Stations are centrally located in 62 cities across the nationwithin a few hours delivery time of the extreme limits of its territory. No need to stock up heavily—just reach into the Stewart-Warner Service Station for duplicate stock as you need it.

The Book

E are continually seeking new ideas that will help the dealer. The Stewart-Warner Advertising and Sales Departments are always testing some idea or adapting some plan toward this end.

Now-right at the beginning of the general touring season, we come out with a practical book on Touring and Camping, "Behind the Steering Wheel." Forty-five pages of authentic informa-tion and ideas for the tourist.

These books are supplied in quantities to Stewart-Warner Dealers thru the Stewart-Warner Service Station in each distributing center. By handing out a few of these books, a steady stream of requests will be created, thereby drawing many new potential buyers to your

Touring demands Accessories that are best supplied from the Stewart-Warner Family.

Get a supply of these books quickly thru the Stewart-Warner man who calls on you, or write direct for name of nearest Stewart-Warner Service Station.

> STEWART-WARNER **CHICAGO**





Spotlight

Open or Cl Cars \$4.25

Stewart-Warner Special Model for Fords red dials tell when to lubricate



Stewart-Warner Electric Motor Horn-\$5 West of 100° Meridian \$5.25



Stewart-Warner Double and Triple Bar Bumpers Black Enameled or Nickel Plated Bars Prices range from \$12.50 to \$37.50 Slight increase in Western Prices

for You-by Steward-Warner

The Sign

HERE'S the hook-up between the millions who know of Stewart-Warner Accessories—and your store—

A 20-gauge steel sign in beautiful colors. It sticks out in front of your store or service station where it may be read on both sides. It gives you the advantage of the business-pulling power of the Stewart-Warner name.

It marks your place as one selling accessories upon which the car owner may obtain service anywhere, no matter where he may need it.

The dealer who has the Stewart-Warner Family of Accessories and displays this sign, has a tremendous advantage over other dealers.

Our advertising in The Saturday Evening Post and other national mediums read by millions, directing car owners to look for this sign—makes a beaten path to your store.

This is an Accessory year, and dealers can cash in on it very easily by taking advantage of the many business building ideas and helps put forth by Stewart-Warner.

Get this sign thru the Stewart-Warner Products Service Station near you. There are 62 of these Service Stations in leading centers, carrying stock for the dealer, into which he may reach quickly for more turn-over material.

SPEEDOMETER COR'N

No matter where you are located, no matter what business problem is

bothering you—turnover, stock, display, buying, merchandising, advertising—write to the Stewart-Warner Dealer Service Bureau, 1826 Diversey Blvd., Chicago, Illinois, or take

it up with the Stewart-Warner Service Station near you.



No.

Stewart-Warner Electric Windshield Cleaner

Complete - \$8.50 West of 100° Meridian \$8.75

-Warner sories



Stewart-Warner Fender Guards
Black Enameled bars, per pair, \$23.00
West of 100° Meridian, \$26.00
Nickel Plated bars, per pair, \$25.00
West of 100° Meridian, \$28.00



Stewart-Warner Rear Vision Mirror For Open or Closed Cars, \$2.00

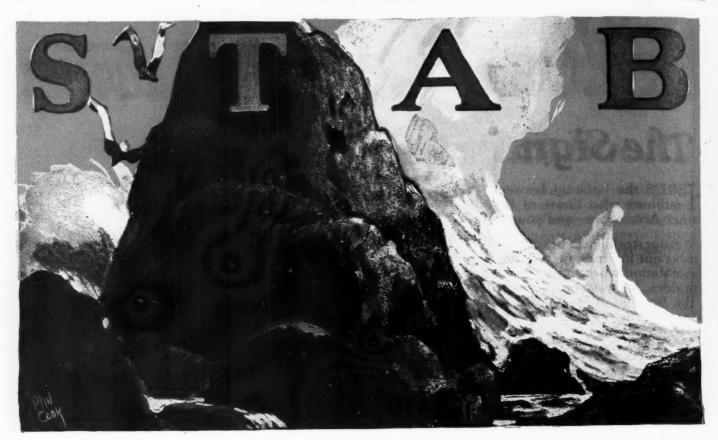


Stewart-Warner Miniature
Spotlight
Prices range from \$9.00 to \$12.50



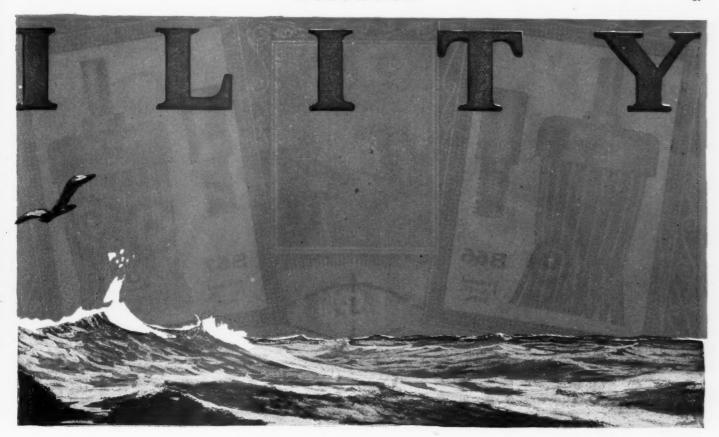
Stewart-Warner Shock Absorbers
Per Pair - \$15.00

Per Pair \$15.00 West of 100° Meridian \$15.50 Special Model for Fords \$11.50 West of 100° Meridian \$12.00



MULTIBESTOS prices do not flutter. Because Multibestos is priced by actual manufacturing cost—not manufactured to meet a price.

MULTIBESTOS COMPANY
WALPOLE, MASS. U. S. A.
Branches: NEW YORK CHICAGO DETROIT NASHVILLE



Multibestos TAXITRUX Brake Lining
Multibestos 229 Transmission Lining for Ford Cars
Multibestos SPECIAL Transmission Lining for Ford Cars
Multibestos NO-WIRE Transmission Lining for Ford Cars
Multibestos FIBRE Transmission Lining for Ford Trucks
Multibestos Lined Brake Shoes for Ford Cars
Multibestos Clutch Linings

BESTO S LINING



CARBON REMOVING BRUSH

Zip!-off come all carbon deposits!

THE flint-like crystals as well as the heavy softer deposits are all peeled off in a jiffy with the Sioux Carbon Removing Brush. You can easily get into the corners and out-of-the-way spots and do a good clean job in jig time.

It's the patented "Sioux" construction—the specially made stiff wires overlapping each other and making a double contact—that makes this new brush so effective in carbon-removing work. It's sturdy—lasts a long time.

Made in two sizes—No. B66 with heavy wire for rough surfaces where carbon must be taken off by force—and No. B67 with fine wire for machined surfaces and for aluminum pistons where high polish is required. Set of two sizes, [No. B68.] Used with small electric drills or Sioux Flexible Shaft.

YOUR JOBBER SELLS IT

ALBERTSON & CO.

SIOUX CITY, IOWA





THE GEMCO Shock Absorber is basically different from all others. Built on approved principles from start to finish. Proved right in every way. Descriptive folder shows how ingeniously it is constructed, how it operates, why it is the biggest development in shock absorber history. Get this folder and learn some new facts about shock absorber efficiency.

Write us today!

An Epoch-Making Shock Absorber Development

- 1. No Servicing
- 2. Real Proportionate Control
- 3. Takes Hold With Lightning Speed
- 4. One Size-Adaptable to All Cars
- 5. Sealed-Proof Against Mud, Dust, Ice, etc.,

emeod SHO

Patents Applied For. Designed and Licensed by V. Van Nattan.

SHOCK ABSORBER

GEMCO MFG. COMPANY, 760 So. Pierce St., MILWAUKEE, WIS.

Makers of America's First Automobile Bumpers

June



Why Aermore Sales are Beating All Records

The Aermore Exhaust Horn is advertised and is self-advertising.

It is advertised in the Saturday Evening Post and other publications, making its exclusive features known all over the country. And it is advertised by Aermore owners, who are so pleased with its performance that they recommend it to their friends.

When other drivers hear it on the road, its tuneful tone catches their attention and makes them want one too. Every week more motorists get to know about it, and every week its sales increase.

The Aermore adds safety to driving. Its courteous signal can be heard distinctly under all conditions. It can be made to sound a gentle warning on quiet roads, or to carry over amazing distances or above the noisiest traffic.

Easily installed. Dependable. Guaranteed.

Write your jobber or us for full details of the Aermore and the Demonstrating Stand which demonstrates its wonderful tone right in your store. Sent free to dealers who will push Aermore sales.

THE FULTON CO

Automotive Equipment
Pace Setters of Quality

The Aermore Demonstrating Stand, Demonstrates pleasing Aermore tone right in your store, Supplied to dealers without cost. Ask your jobber.

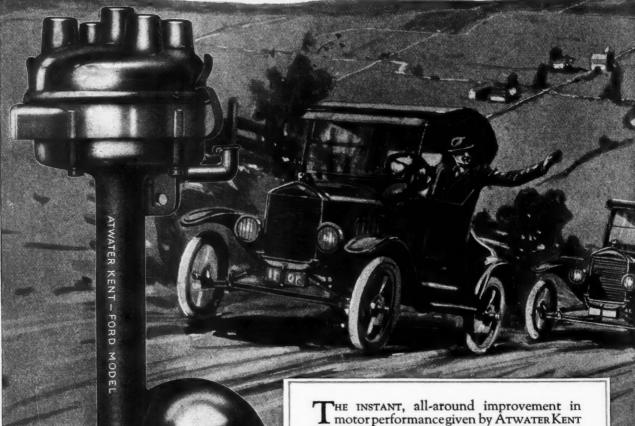
PATENTED



with every case of ten caps.

TWATER ENT

Ignition for FORDS



Type LA for Fords \$1080

THE INSTANT, all-around improvement in motor performance given by ATWATER KENT Ignition is centering the attention of more and more Ford owners on this dependable system.

Through this ever-increasing interest, automotive dealers, from coast to coast, are making daily sales and handsome profits.

You, too, no matter where you are located, can cash in on this demand. The proven quality and attractive price of ATWATER KENT Ignition carry the strongest possible sales appeal. And after it is installed, its absolute satisfaction to every Ford owner will help make your store headquarters for Ford replacements.

ATWATER KENT MANUFACTURING COMPANY 4733 Wissahickon Ave., Philadelphia, Pa.



What AC Means to the Dealer

AC Spark Plugs



More than 80% of all the cars produced in this country, Fords excluded, are factory equipped with AC Spark Plugs. Among these cars are:

Nash Oakland Oldsmobile Paige Star Velie Westcott Wills Saints Claire

AC 1075 for Fords



One glance tells the whole story - Why the AC 1075 is an especially good plug for Fords-Here are its features:

- Spring Terminal Clip
- ² Heavy Body Porcelain
- 3 High Temperature Fins— Patented Carbon-proof Porcelain
- 4 Heavy Electrode Forms Natural Oil Drain.

Dealers who carry a good stock of AC products can build a profitable business. The demand is assured because of their use as car equipment.

Backed by strong advertising.

They afford you the margin of profit you should get.

AC Spark Plug Company, FLINT, Michigan Makers of AC Spark Plugs-AC Speedomsters-AC Air Cle

AC-SPHINX ENGLAND

AC-OLEO Levallois-Perret FRANCE

AC Speedometers



The Model for Fords

Miles per hour, miles per trip, total mileage—it tells them all.

Simple direct drive is a big improvement over previous types of drives as it does away with the swivel joint.

Complete with all attachments and once installed is a source of constant satisfaction. The cost is surprisingly low—\$15. (\$21.00 in Canada.)

That AC Speedometers can be depended upon for trouble-free operation, is evidenced by the fact that they are original equipment on such cars as Buick, Cadillac, Chevrolet, Chrysler, Gray, Maxwell, Oakland, Oldsmobile and GMC Trucks.

AC Air Cleaners



Easily installed as it connects directly to the carburetor.

Onceinstalled it requires no attention, having no moving parts to get out of order, and its high permanent cleaning efficiency keeps down repair bills.

Comes complete with all attachments and is reasonably priced—\$5.00 to \$7.00 (\$7.00 to \$10.00 in Canada) depending on the size required.



A Standard Buick Touring Car is circling the globe, passed from the hands of one dealer to another and being driven entirely by the dealers through whose territory it travels. And it is journeying on its own power every one of its land miles through the sales and service territory of Buick dealers. A remarkable illustration of the sturdiness and reliability of the car that Buick dealers sell.

Those desiring the Buick franchise should have their names on file.

BUICK MOTOR COMPANY, FLINT, MICH.

Division of General Motors Corporation

Pioneer Builders of Valve-in-Head Motor Cars Branches in All Principal Cities—Dealers Everywhere

KNOWN FOR RELIABILITY SINCE THE OLD DAYS"

For short stops and long screw

Thermoic Hydraulic Compressed Brake Lining

What Does Reliability Mean in Your Young Life?

7HAT is it to you, as a garageman, whether Thermoid has been known as a reliable brake lining for the last quarter century or whether it entered the field last year?

Might as well ask what is it to you whether you turn out reliable jobs for your customers or unreliable ones. And that would be a foolish question.

You haven't time to test every foot of brake lining you buy and check up every statement the salesman makes when he sells it to you.

You want to know, not merely hope, that the lining you install on a customer's car is thoroughly reliable. You want a lining you can depend on without any ifs and buts. You and your customers are looking for results, not alibis.

It is to give you just such a reliable lining that the Thermoid Rubber Company has constantly maintained its manufacturing standards for the past twenty years. Whether asbestos and brass wire have been cheap or dear, there has been no wavering from that standard.

The trade has come to look upon the name "Thermoid" as a guarantee of reliability—and the trade has never been disappointed.

THERMOID RUBBER COMPANY Factories and TRENTON, N. J.

Makers of Thermoid and Rexoid Transmission Lining, Thermoid-Hardy Universal Joints and Mechanical Rubber Goods

Thermoid Hydraulic Brake Lining

For short stops and long ser

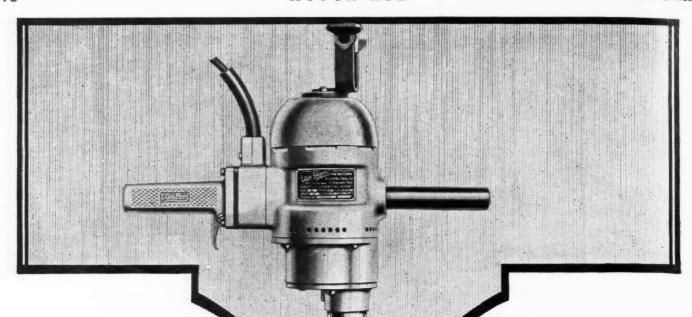


Come On Around!

COME right on around! Pass him! The gravel is loose, and deep and yielding but, what's the difference when your car is equipped with the Ross Cam and Lever Steering Gear? She handles with ease and stays put. You drive with assurance, safety and little effort. On any road in any emergency, Ross supplies new and imperative steering advantages!

ROSS GEAR AND TOOL COMPANY, 400 Heath Street, Lafayette, Indiana





The Dray Horses

To properly perform the increasingly hard work in service stations such as truck repairs; the driving of stiff hones for cylinder regrinding, etc., portable electric drills must have greater strength, power and endurance than was heretofore considered necessary.

Of course, the meeting of these severe conditions comes natural to "Van Dorn" Electric Drills because for twenty-five years they have been built for the most gruelling service in America's leading industries.

The "Van Dorn" family shown on this page will give you more power per pound and more power per dollar of first cost than any other line on the market.

of Drilldom

All of the universal drills on this page are considered heavy duty tools in their particular size. They are all high powered, sturdy drills; perfectly balanced; with ball bearings thoughout; with automatic quick make and quick break switch; with hardened alloy steel gears; and all the other good qualities that you have a right to expect in electric drills.

Send for handsome new 48 page catalog showing full line of electric drills, reamers, grinders and glue heaters.

The Van Dorn Electric Tool Co.

Makers of Portable Electric Drilling, Reaming and Grinding Machines, Etc.

Cleveland, Ohio

SALES AND SERVICE BRANCHES
Atlanta, Boston, Buffalo, Chicago, Cincinnati, Detroit, Kansas
City, Los Angeles, New York, Philadelphia, Pittsburgh, Richmond, St. Louis, St. Paul, Salt Lake City, San Francisco,
Seattle, Toronto.



1925 Ideas On Valve Replacement





Garage and repair men who have studied the best and most *profitable* way to handle valve replacement jobs, find that installing a *complete new set* of valves is byfar the best method.

Regrinding old valves has only been a makeshift.

A complete new set of valves costs the car owner very little more; it guarantees maximum power and speed from the engine; and you make greater profits!

Put in a complete new set of James Motor Valves in your next valve job. But be sure you get James Valves because they are the better valve.

They are built strictly in accordance with car-maker's specifications. Stems are 1020 S. A. E. steel; heads are fine grey iron and electrical welding is employed in joining the head and stem together. Every valve is individually wrapped in wax paper, retaining its original fine finish.

Jobbers and dealers throughout the country carry complete stocks of James Motor Valves. If you are unsuccessful in obtaining James Motor Valves, write us and we will see that you are supplied without delay.

JAMES MOTOR VALVE COMPANY

1350 Maple Street

Detroit, Michigan



Make Money Selling

PROTECTOMOTOR

Reg.u.s. PAYLOFF.

Perfect Positive Protection

to customers we make for you by advertising in the Saturday Evening Post.

99 PROTECTOMOTOR 99 10 EFFICIENT Perfect Positive Protection FFFICIENT

Triples the Life of Your Motor

FILTRATION is the only method that removes all dust, sand and grit in the 9,000 gallons of air that enter the motor with every gallon of gas. Protectomotor alone

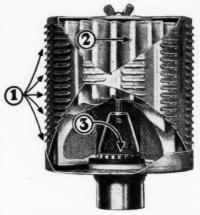
Prevents Wear 75% to 85% Prevents Carbon 60% to 75% Prevents Carburetor Noises

Five years actual use on many makes of automobiles, trucks and tractors, tests made by the University of California, the United States Government, automotive manufacturers and engineers, prove every claim made in this advertisement.

If your dealer cannot supply Protectomotor, write us direct giving make and model of car and make and model of carburetor.

STAYNEW FILTER CORPORATION ROCHESTER, N. Y.

A MOTOR WITHOUT A PROTECTOMOTOR IS LIKE A WATCH WITHOUT A CASE



- 1 Air enters large number of small openings in outer shell at low velocity so the coarse particles of dust are separated by gravity.
- 2 Specially constructed filtering material, chemically treated, removes even the finest (those that cause wear) particles of dust but readily permits air to pass through.
- 3 Pure, clean, FILTERED warm air passes through this outlet to carburetor and motor, the fine dust (the cause of wear) entirely removed.

Important:—Protectomotor is made of aluminum and rust-proof material throughout. Due to highest grade of workmanship and material it presents an unusually attractive appearance,





Dusty Air

Filtered Air that prevents wear

CAR owners, manufacturers, up-to-date dealers all recognize the need of filtered air for motors.

Protectomotor is the only device adaptable to automobiles, truck and tractor alike that is 99 9-10 per cent efficient. Any device less efficient is not adequate. These are the facts we are telling 2,250,000 readers of the Saturday Evening Post in page, halfpage and quarter-page advertisements. The demand for the Protectomotor is here. All you have to do is to show one and you make the sale. Write for dealer's discounts, signs, advertising and selling helps.

Protectomotor is the mightiest money maker in Motordom.

STAYNEW FILTER CORPORATION

Rochester, N. Y.

A motor without a Protectomotor is like a watch without a case



"A LAMP FOR EVERY AUTOMOTIVE NEED"

Victor SPOT LAMPS



"Pathfinder"

No. 100. Here's 'an all-brass heavily nickeled 4" lamp, double shelled for strength, but having the appearance, grace and symmetry of a single shell. Makes an instant hit. For all cars.



"Argent"
(For Closed Cars)

No. 103. Same as the "Pathfinder" but with a heavy cast brass, nickel plated bracket for mounting on closed cars.



"Triumph"

No. 40. A 6" spotlamp for the driver who likes 'em big. Fills all state requirements, and fits all windshields. Victor quality throughout. You'll sell many of these.

Every Car Owner Needs, Wants and Eventually Buys— A SPOT LAMP

THE night driver finds so many needs for a spotlamp, and is so handicapped without it, that sooner or later he calls in and buys one.

You want him to be satisfied with his purchase—and the surest and safest way is to sell him a Victor. You know Victor, and that only the best lamps bear the name. The world's biggest replacement lamp manufacturer is behind you, and every sale carries a good clean profit. Write for bulletin describing complete Victor line.

The Cincinnati Victor Co.
716 Reading Road
Cincinnati, Ohio

The "Gloworm" Parking Lamp

THIS little 3-jewelled beauty is a wonderful selling mate to a Victor Spot Lamp—

Polished nickel finish with imported cutjewel lenses. Third jewel in side is green.



YOUR FIRST PROFIT ON SERVICE SALES

A careful survey of 150 typical automobile service shops in all parts of the United States reveals the fact that the first replacement parts needed by the car are the bushing bearings in spring shackles, steering assembly, and pistons. Here is the first profit opportunity for the service man. Meet it with Bunting Bushing Bearings.

THE BUNTING BRASS & BRONZE CO. TOLEDO, OHIO

BRANCHES AND WAREHOUSES

NEW YORK 15 West 54th S Columbus 7528

CHICAGO 2015 S. Michigan Ave. Calumet 6850-6851

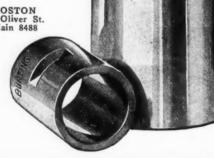
SAN FRANCISCO 198 Second St. Douglas 6245

CLEVELAND 710 St. Clair Ave., N. E. Main 5991

PHILADELPHIA 1330 Arch St. Spruce 5296

BOSTON 36 Oliver S Main 8488





BUNTIN

"Every noisy car is ask-ing for Bunting Bush-ings."

Bely Bunting



BUNTIN

BUNT PHOSPHOR BRONZE



Automobile **Dealers**

Here's Your BIG Opportunity

An extensive advertising campaign in the Saturday Evening Post and other publications will help you sell Stromberg Super Shock Absorbers. Up-to-the-minute sales helps will be at your disposal. Here is the right shock absorber, at the right price

with the right discount arrangement. You as an automobile dealer are in a position to reap big sales and generous profits. Line up now. Write our nearest branch or direct to us.

LIST PRICES
Individual Package Equipments, complete with all fittings necessary for installation, for the following

Buick \$35.00	Jewett \$35.00
(Standard Six)	Maxwell 35.00
(Master Six)	Nash 35.00
Chandler 35.00	Oakland 35.00
Cleveland 35.00	Oldsmobile 35.00
Dodge 35.00	Reo 35.00
Essex 35,00	Studebaker 35.00
Hudson 35.00	(Standard Six)
Hupp 35.00	(Special Six)
(Four Cyl.)	Willys-Knight 35.00
Ford	\$12.50
	24.75
	14.00
	24.75

Stardard sets of four for all other makes of cars weighing less than 4000 pounds, \$35.00 (separate pairs for front or rear for all other makes of cars, complete with fittings \$17.50).

All prices slightly higher on Pacific Coast and in Canada.

Unless the make of car is listed above, advise name and model so proper fittings can be furnished.

Over Roughest Roads Without Bumps or Jolts

Become acquainted with the most important development in comfortgiving automobile necessities.

Stromberg Super Shock Absorbers control, in the right way, every degree of spring rebound and balloon tire "gallop."

They give a freedom from bumps and jolts, and a relief from driving strain, never before thought possible.

Twelve Features Which Prove Their Superiority:

- 1 Designed on a new and better principle.
- 2 Regulates spring action to exactly the correct degree under all driving conditions.
- 3 Provides smooth, easy riding with either Balloon or Standard tires.
- 4 Working parts protected against dirt, 10 Lasts as long as your car.
- 6 No adjustments are ever necessary.
- 7 No greasing or oiling required.
- 8 Operates uniformly Summer and Winter.
- 9 Built to measure for each make of car.
- water and oil.

 5 Heavy steel cable will not break—stretch 11 Sold and guaranteed by a leading and responsible manufacturer.
 - 12 Each set in separate package which contains all necessary fittings for installation.

Get all the particulars—and our big sales promotion plan. Write our nearest branch or direct to us.

Sold and Guaranteed by

Stromberg Motor Devices Company Builders of the Famous Stromberg Carburetor

68 EAST 25th STREET, CHICAGO

NEW YORK BOSTON DETROIT MINNEAPOLIS KANSAS CITY LONDON, W. I. ENG. 517 W. 57th St. 760 Commercial Ave. 2739 Woodward Ave. 1609 Hennepin Ave. 1809 McGee St. 173-75 Cleveland St.



The ENGINE'S WATCHDOG!

Always on guard against trouble, the Cooper Cutout is the watchdog of the engine.

Its clear, staccato "crack" enables the driver to test and tune up his engine at will, and to detect any irregularity in the motor. When troubles develop, it warns him in time to remedy them before they become too serious.

That's why the Cooper is the cut-out that every motorist wants—the cut-out with the big sales. Nationally advertised, it brings big and steady profits to Cooper dealers.

The Cooper is distinguished from all others by its greater strength and more satisfactory operation. Extra heavy spring, axle and flapper insure absolute silence when closed. Easily installed without severing or weakening the exhaust pipe.

Get your share of the profits Cooper dealers are going to make this summer. Write to your jobber about it—now.



For cut-outs, choke, etc. Twist of wrist locks it in any position. Exposed parts polished nickel.

THE COOPER MANUFACTURING COMPANY

419 South First Avenue, Marshalltown, Iowa

Exclusive Sales Representatives

THE FULTON COMPANY, MILWAUKEE, WIS.

For All Makes of Cars PRICES VALVES ONLY

1½ in	\$2.50
15/8, 13/4, 17/8	3.00
2, 21/8	
21/4, 23/8, 21/2, 25/8	4.00
23/4, 27/8, 3	
Chevrolet Special	4.00
Cooper Special Valve complete with ped-	
al for Fords	3.00



Cooper "Chevrolet Special" Cut-out, \$4.00



The new Cooper Jr. Dash Control. Similar in operation to Sr. Control. Polished nickel hand grip; black enameled dash plate. Price \$1.25. Complete with Cooper Special Cut-out for Fords—\$3.75.



Sales Come Easily with our New Plan!

E have a plan that works successfully 98% of the time. It means SALES regularly-which is the

main thing—the BIG thing in YOUR business.
The LORENTZEN Headlight Kontrol is the logical dimmer control. It dims the lights gradually-just as you turn the "juice" on in your radio set.

The gradual dimming permits your eyes to accustom themselves to the light change. Two extended finger tips control the headlights. No need to remove hand from wheel-foot from pedal-eyes from road. Nothing is left to chance.

Two sizes fit all cars. No. 1—6 to 8 volts. No. 2—12 to 16 volts. One low price \$7.50. Put on with a screwdriver in ten minutes. Clean cut merchandising policy. Rare discounts. Sales-making dealer helps. Send for details of our new plan-it is the money-maker.

We also have a very attractive proposition for exclusive distribution in certain territories. Write for particulars. No time like the present.

> Lorentzen Headlight Kontrol, Inc. 60 Grand St., New York City

LORENTZEN HEADLIGHT LEGAL IN ALL STATES

Copyright 1925 by Lorentzen Headlight Kontrol, Inc.

Seven Easy Steps

The eyes follow the seven stages of Lorent-zen Headlight Kontrol

without strain or effort

dimming allows the pupil of the eye to enlarge without danger of blind spots. If you don't "cross" nature you don't "cross" trouble.

naturally. The gradual















eatures that sell the new Chevrolet

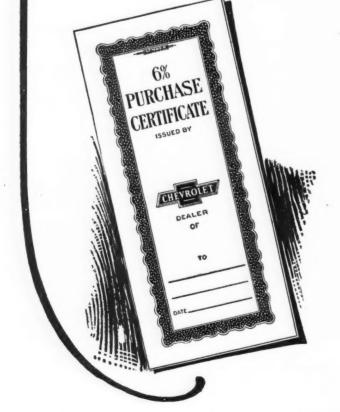
How to buy a Chevrolet with \$5 down— this is a question in which thou-

this is a question in which thousands of prospects for the purchase of motor cars have been interested.

Over six million dollars' worth of Chevrolet cars have been bought in this way through the Chevrolet6% Purchase Certificate Plan. This plan has benefited not only thousands of people who wish to buy cars, but also thousands of Chevrolet dealers who are able, with this plan, to secure many orders which might otherwise have been postponed or lost entirely.

CHEVROLET MOTOR COMPANY DETROIT, MICH.

DIVISION OF GENERAL MOTORS CORPORATION

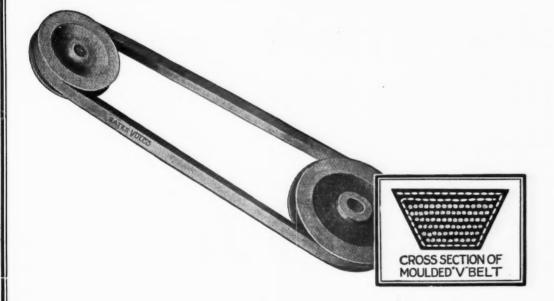




QUALITY AT LOW COST

GATES BELTS

"The Standardized Fan Belt"



The same cords and the same construction as in a cord tire—that's the reason for the service and satisfaction Gates Vulco V-Belts are giving your customers.

Made by the World's Largest Manufacturers of Fan Belts.

June

Every other working day last year a carload of new cylinders was put into service for users of

Prest-O-Lite dissolved acetylene

THE PREST-O-LITE COMPANY, INC.

Oxy-Acetylene Division

General Offices: Carbide & Carbon Bldg., 30 East 42d St., New York In Canada: Prest-O-Lite Co. of Canada, Limited, Toronto

31 Plants - 60 Warehouses - 22 District Sales Offices











"019"

the new 9-inch Crescent drop-forged, large capacity wrench is great for all around service on cars or farm machinery and in the home. Attractively polished. Three-inch capacity. Retail 75c.



The Crescent Display Boards, illustrated above, are attractively printed, equipped with lock easel backs, and supplied in their respective assortments at the cost of tools alone. Your jobber has them.

CRESCENT TOOL COMPANY

208 Harrison Street, Jamestown, N. Y.

Originators of the Crescent Wrench

CRESCENT TOOLS

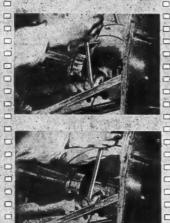
IT'S EASY -To Get Around Obstructions











by the "movie man" getting around the horn on a Ford in tightening the water inlet cap screw. Other places where this wrench is particularly useful on Ford cars:

Cylinder Heads Water Outlets Connecting Rods (including fourth) Main Bearings Demountable Rim Nut

Equally useful on all popular cars.



The new feature—the swivel action of the handle - makes it one of the most useful wrenches we have ever brought out because it can be used in many different positions and on many different cars.

Two Stock Numbers:

No. 774-5/8 Hex.-will reach Fourth Connecting Rod on Fords with crank shaft in any position. No. 775-9" Sq. -will reach Front Main Bearing and Center Main Bearing on Fords without taking the motor out.

Ask your Jobber or write us for catalog No. 51



wsive manufacturers of All Steel, Socket Wrenches, - in the World

WORCESTER, MASS.,

U. S. A

FOR FORDS

Off without effort—
On without effort—
No tools required—

One OFF'N'ON Chain (Catalogue No. 1002) fits both balloon and cord tires for Fords.

9

Nine **OFF'N'ON** Chains fit all regular balloon sizes.

Eleven OFF'N'ON Chains fit all other passenger car tires, including regular cords and semi-balloons.

Most progressive move in the chain industry. Maximum stock with minimum investment—quick turnover.

All the grief taken out of the chain business by the sound Off'N'ON Chain merchandising plan, which

REDUCES CHAIN STOCKS FROM 50 TO 20 SIZES

PYRENE MFG. CO. Makes Safety Certain NEWARK, N. J.

Every Week

There are so many important articles, current news items, and interesting features in the fifty-two issues of Motor Age each year, that subscribers find it most profitable to read carefully through every issue when it comes.

The timeliness of its contents is one of its most valuable assets.

Make it a point to look through Motor Age while its news is still fresh, and you will see why it is that its oldest friends and most loyal supporters read it regularly, every week.



5 So. Wabash Ave., Chicago, Ill.

You Can Get Fisk Balloon Tires overnight!



This window display in ten colors Fisk dealers are using in June. It represents but one of the ways the Fisk Company builds business for their dealers.

No matter where you are, one of the 145 Fisk Wholesale Branches is near enough so that any order you give one day reaches you without delay. Think how valuable this Fisk Branch System is when there are so many sizes in two types of Balloon Tires in demand.

The Fisk Branch Organization, the most complete in the country, is maintained for the convenience of Fisk Dealers. It is only one of the many selling advantages available to its dealers that you will appreciate when you are familiar with the Fisk Franchise.

Let us tell you more about the Fisk Franchise proposition.

Write us today for full information.

The Fisk Tire Company, Inc.
Chicopee Falls
Mass.



Don't Miss a Single Copy!

The very next issue may contain an idea that will be worth many times the price of a subscription! But unless you get a copy of next week's issue, the idea will never mean anything to you!

Every week MOTOR AGE has something new to offer its readers! Every week the automotive trade moves forward! And the man who doesn't read and keep up to date is the man who gets left behind!

Don't Miss a Single Copy! You Can't Afford to!

A Year's Subscription to MOTOR AGE Only Costs You \$3.00

-And Here's What You Get:

Fifty-two copies of the only weekly maintenance paper published in America.

A weekly news service that is always up to the minute—all the news while it is news.

The right to use the Readers' Clearing House whenever you have a problem that needs personal attention—a service that is alone worth more than the cost of the magazine.

The real facts as to how other men are succeeding in a business just like yours.

Proven ideas from all over the country—new ones every week.

New car descriptions the minute they are released.

Mechanical specifications, prices, and weights of all American cars brought up to date every week.

Subscribe now, and be sure of getting a copy!

MOTOR AGE

5 S. Wabash Ave., Chicago, Ill. IMPORTANT MOTOR AGE is published exclusively for the trade. Subscriptions are accepted only from those actively engaged in our field—so please den't forget to include your business eard or letter head with this order.

Gentlemen: Enclosed find \$3.00 to pay for a year's subscription to MOTOR AGE, including all special issues published during the life of my subscription.

Name.....

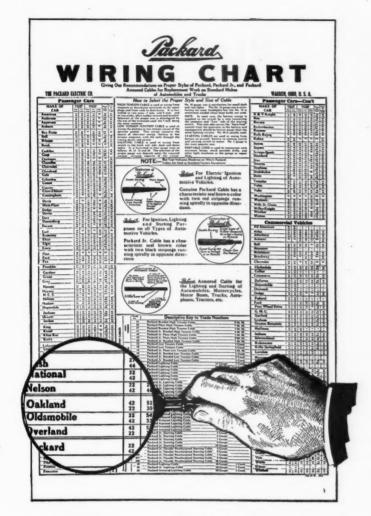
Street and No.

City.....

...State..

Firm Name

NOTE ____ If you are already subscribing to MOTOR AGE, please hand this coupon to a dealer who is not. He'll become a better competitor from reading MOTOR AGE.





The Right Cable for the Job

Realizing the vital importance of the electric cable system, it will be readily appreciated that the *right cable* in the *right place* is an urgent necessity on all rewiring jobs.

From the standpoint of quality the right cable for every automotive requirement is unquestionably Packard. Twenty-five years of specialized experience has justly earned for Packard Cable a reputation for quality that is the recognized standard for the entire Automotive Industry today.

The right type, style and size of Packard Cable for any specific requirement on any make of automobile or truck will be easily and quickly ascertained by reference to the Packard Wiring Chart illustrated above.

You can secure one of these wiring charts from any Packard Jobber, and over 300 of the best automotive jobbers in the United States are Packard Jobbers, or we will be pleased to send you one direct, upon request.

There is a good profit and real business building opportunity in the rewiring of automobiles. The use of Packard Cable and accompanying sales helps will assist you materially in getting some of these profits.

The Packard Electric Company Warren, Ohio

"Tackard is never seen, except on goods of honest value"

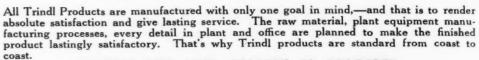


QUALITY PISTON PINS

VALVES

PISTON PIN

SET SCREWS



EVERY PIN AND VALVE IS MARKED

Every pin and valve shows the stock number and size in plain figures right on the part. No chance for mistakes. No delay and waste of time. No possibilities of getting the stock mixed or sets broken.

TRINDL PRODUCTS ARE GUARANTEED

Trindl Products are guaranteed by an old reliable manufacturer to give absolute satisfaction, to fit every motor for which they are intended, to be free from defect of any kind and wear longer.

THE TRINDL CO.

CHICAGO

ILLINOIS



Protexalls for 1925

Our Service Is Complete

We have been manufacturing Protexalls for the past 35 years and can offer you complete service in all branches.

Our line of several grades of garments in blue, khaki, white and stripes has been perfected by many years experience in making high-grade work clothes.

Protexalls for Advertising

We are the originators of advertising lettering service. You may have your name or trade-mark stitched in fast color turkey red on every Protexall you order. - - - "Lettered Protexalls will help you in your advertising."

We ship promptly from six factories and can handle large or small orders PROMPTLY. "Protexalls are packed in individual dust-proof cartons."

Sold Only Through Jobbers

THE PROTEXALL COMPANY

Abingdon, III.

312 West Second South St., Salt Lake City, Utah



Sells in Volume at

YOUR light-car owner is a "price-buyer"—or he'd have a bigger car. But he's generally more than that. He's a "how-much-for-my-dollar" buyer, who wants value too!

That's why these good Basco Model B Motor Driven Horns sell in volume at \$4! There's more value there—in looks, in tone, in service.

Four dollars never bought a better horn. Installed in a few moments; oiled and adjusted from the outside; guaranteed; carries a real money-making discount. Write for new horn folder and name of nearest Basco Distributor.

BRIGGS & STRATTON CORP.



MILWAUKEE WISCONSIN



Allsteel Files

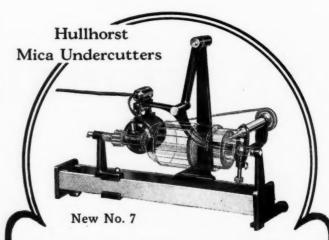
RAWERS that operate at a touch, with velvet smoothness-greater filing capacity per unit—unusual fire protection—and no wearing out. All these are Allsteel File advantages. Welded construction throughout, beautifully and richly finished in baked-on enamel, Allsteel Files—like the entire Allsteel Office Equipment line—guarantee you permanent satisfaction, at a reasonable cost. Write for the new GF Allsteel Furniture Catalog. THE GENERAL FIREPROOFING CO.

Youngstown, Ohio
Dealers Everywhere . Canadian Plant: Toronto, Ontario



Attach this coupon to your firm letterhead

		recacii	time c	oubou	to y	our	TTK IN	reffe	rnead	
The G	eneral	Fireproof	ing Co.,	Youngsto	own, O	hio.				MA
The G	se sen	d me with	out oblis	gation a	copy of	The	G. F.	Allsteel	Furniture	Catalog.
Name				*************	**********		*********	******		
Street	No.	***************************************		***********			*********		***************	
Clify						674	nto			



Be "The Armature Man" in Your City

You can build up a money-making-business on armature work. Do it for all repair shops in your locality.

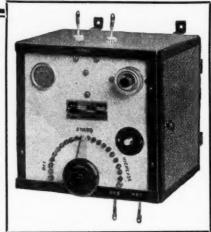
With a Hullhorst Mica Undercutter you can handle this work at minimum operating cost. Anyone can do fast and perfect work with this undercutter.

HULLHORST Undercutters are used and approved by United Motors Service, Inc., and hundreds of service stations. It will pay you to investigate. Write now.

The Hullhorst Micro Tool Co.

3240 Monroe St.

Toledo, Ohio



Increase Your Income with

DEBCO The Better CHARGER

Built for Heavy Duty Service

Low Initial Cost 20% Current Saving

Lower Bulb Maintenance

Indorsed by Paige-Detroit Motor Car Co., A. R. Lewellyn, Chief Engineer, Chevrolet Motor Car Co., and others. It's many advantages mean greater profits for you, better satisfaction and more new business.

WRITE FOR

FULL INFORMATION. Please give jobbers' name and address.

DETROIT BATTERY CHARGER CO.

3691 Willis Ave., E.

Detroit, Mich.



From the drain plug in the bottom of your gas tank—all along on every gas connection—on vacuum tank and carburetor—to stop a leak or to prevent leaks—put KEY GRAPHITE PASTE on the threads.

Gasoline Does Not Dissolve Key Graphite Paste—Make this test

Rub any quantity of Key Graphite Paste on the palm of your hand. Pour gasoline on it, and note that paste is not washed away by the gasoline. It does not mix with gasoline. Now wash it off with soap and water.

The Many Uses of Key

Seals all gaskets on cylinder head and crank case. Seals all screw thread joints. Prevents sulphation and stops corrosion on battery terminals. Makes leak-proof hose connections. Fine on spark plug threads to stop leaks. On rusted tire rims. For painting the manifold. Spring lubricant, etc., etc.

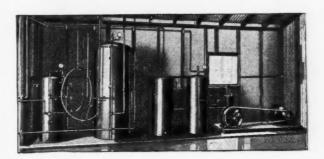
A Money Maker for Dealers, Garages, Service Stations and Battery Stations.

KEY BOILER EQUIPMENT CO.

27th and McCasland Ave., E. St. Louis, Ill.

For-	
Free	Key Boiler Equipment Co. 27th and McCasland Ave., E. St. Louis, Ill.
_	Name
Sample	Address

Make \$50º a Day with an Auto-Laundry



Don't Delay. A Year to Pay. Start Today! Pay Out of Income from Business. Less than one car wash or motor clean a day pays for an Auto-Laundry Machine.



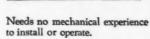
This machine is making \$50.00 a day and more for owners now operating Auto-Laundries in 40 States. Its success has established leadership in the field of mechanical autowashing, in which we are the pioneers.

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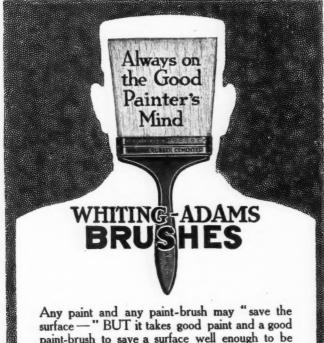
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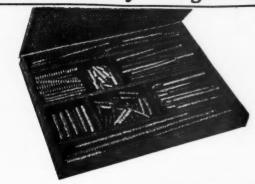
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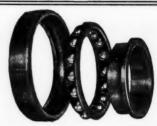
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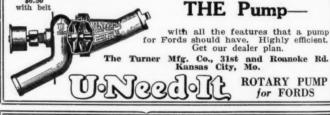
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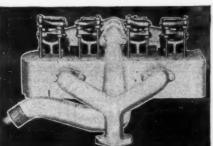
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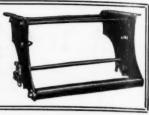
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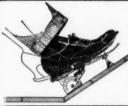
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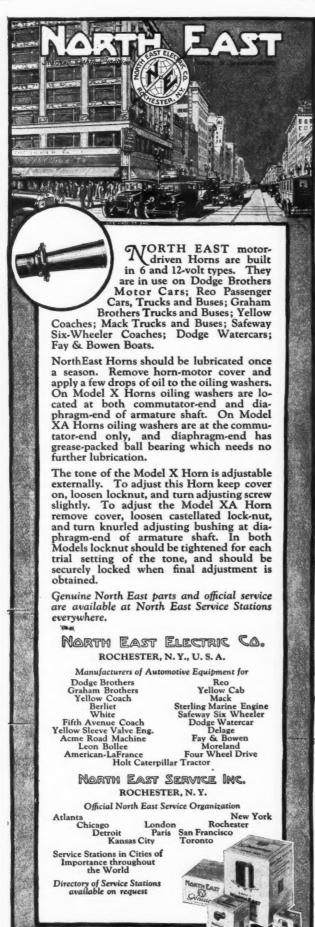
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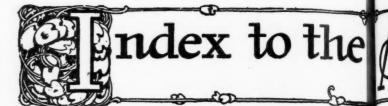
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It is conceded by autoists that Crawford Notch, the famous beauty spot of the White Mountains, is one of the severest tests encountered by tourists through New England. Mr. Robert Miller, of St. Louis, recently played good Samaritan to another tourist at Crawford Notch, thanks to Basline Autowline.

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CHATTANOOGA. TENNESSEE



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Is a light, powerful and efficient boom type wrecker. Its price is moderate and it has twelve of the famous 15 exclusive Holmes features. Operates entirely from the ground.



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Is the most powerful, economical and efficient crane type wrecker ever manufactured. Operates entirely from the ground.



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